

FINANCIAL REPORTING (PART – II)

INDEX

S. NO.	NAME OF CHAPTER	NUMBER OF PROBLEMS	PAGE NO.
1.	SHARE BASED PAYMENT	43	1 – 46
2.	VALUE ADDED STATEMENT	42	47 – 80
3.	MUTUAL FUND	47	81 – 118
4.	GUIDANCE NOTE ON TREATMENT OF EXCISE DUTY	10	119 – 131
5.	HUMAN RESOURCE ACCOUNTING	13	132 – 136
6.	NON – BANKING FINANCIAL COMPANIES	7	137 – 144

GUIDANCE NOTE ON SHARE BASED PAYMENTS

Meaning – Whenever employees are allowed compensation in form of shares or based on shares, then benefit arising from such shares is called share based payments. The term employee includes a director of the enterprise, whether whole time or not for the purpose of employee share – based payment.

Some terms –

(a) Grant date – It is the date when the enterprise and the employees agree to the terms of a share – based payment plan, after obtaining requisite approvals.

(b) Vesting conditions – These are the conditions which the employee must satisfy to become eligible to receive cash / shares / options under a share based payment plan.

(c) Vesting period – It is the period starting from the grant date and ending with the date on which all the vesting are expected to be satisfied.

(d) Exercise date – Exercise date is the date when an option is exercised by paying the exercise price.

(e) Exercise price – Exercise price means the price payable by the employee for exercising the option. Since the share based payments are payments for services rendered by employees during the vesting period, the value of share based payments should be recognized as “Employees Compensation Expenses” during the vesting period.

Share based payment plans – Share based payments can be of following forms:

(i) Employees share purchase plan (Sweat equity shares) – It is a plan under which the enterprise grants rights to its employees to purchase its shares at a stated price at the time of public issue or otherwise.

(ii) Employees stock option plan (ESOP) – It is a plan under which the enterprise grants employee stock option. Employees stock option is a contract that gives the employees of the enterprise the right, but not the obligation, for a specified period of time to purchase or subscribe to the shares of the enterprise at a fixed or determinable price.

(iii) Stock appreciation rights (SAR) – It is a right that entitles the employees to receive cash for an amount equivalent to any excess of the market value of a stated number of enterprise’s shares over a stated price.

Employees share – based payment plans – The value of option for the purpose of accounting for share based payments can be either intrinsic value or fair value.

(a) Intrinsic value – Intrinsic value here means, Market price – Exercise price (grant price)

(b) Fair value – Fair value of an option is defined as the amount for which stock option granted can be exchanged between knowledgeable, willing parties in an arm’s length transaction. Fair value is always given in the question.

Note: First preference should be given to fair value method.

(i) EMPLOYEES STOCK OPTION PLAN

- Under ESOP plan shares are issued to employees after fulfilling vesting condition imposed by the employer.
- Expenses should be recognized for the period decided on grant date based on expected options to be exercised by the employees.
- There are two methods for recognition of expenses:
 - 1st Preference – Fair value method
 - 2nd Preference – Intrinsic value methodWhere Intrinsic value = Market price – Exercise price

- Expenses should be calculated by using following formula:

Option expected to exercise * F.V. * expired period / Total vesting period	xxx
Less: Expenses recorded earlier	(-)
Expenses of current year	Xxx

- ACCOUNTING TREATMENT:

Journal Entries

- (i) Employees compensation a/c
 To Employees stock option a/c
 (Being expenses recorded) Dr.
- (ii) Profit and loss a/c
 To Employees compensation a/c
 (Being amount transferred) Dr.
- (iii) If expenses of any year negative:
 Employees stock option a/c
 To General reserve a/c Dr.
- (iv) At the time of exercise
 Bank a/c
 To Employees stock option a/c
 (Being amount received) Dr. (Exercise price)
- (v) Employees stock option a/c
 To Share capital a/c
 To Securities premium a/c
 (Being shares allotted) Dr.
- (vi) At the time of cancellation / for option lapsed
 Employees stock option a/c
 To General Reserve a/c
 (Being Employees stock option cancelled) Dr.

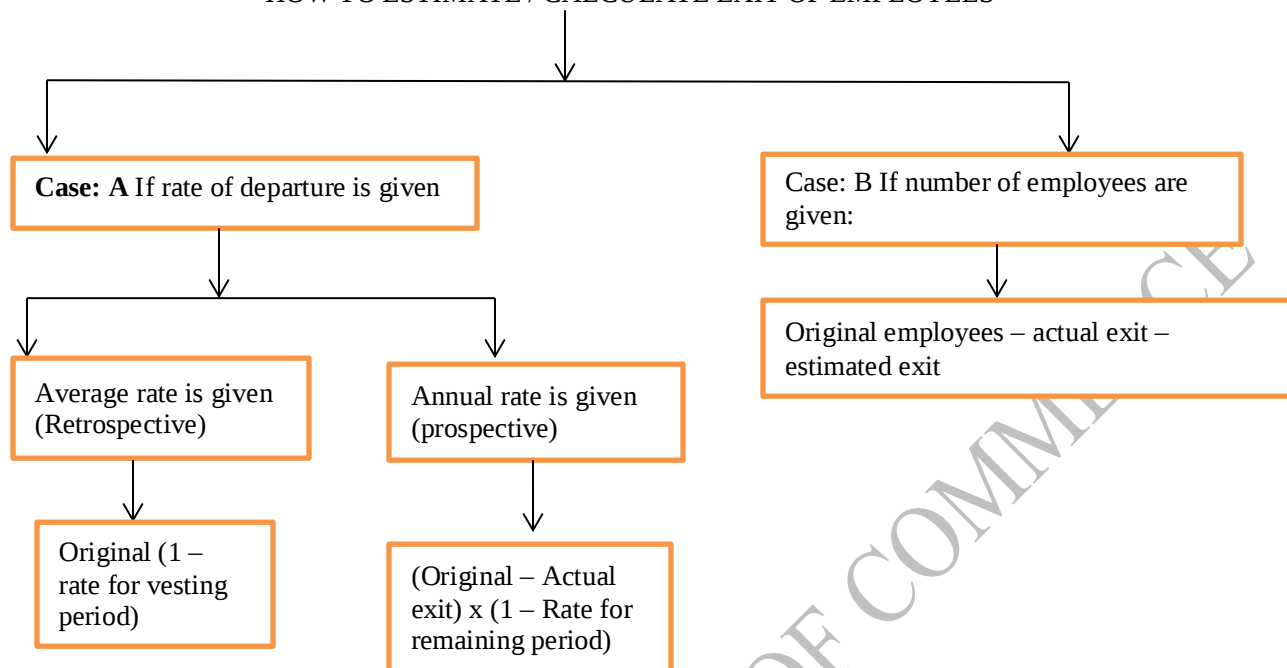
Note: Sometimes in the question unvested option lapsed and vested option lapsed are given. Unvested option lapsed means number of employees left before fulfilling the vesting condition. No separate journal entry required for unvested option lapsed.

Vested option lapsed means number of employees not exercised the option after fulfilment of vesting condition. Separate journal entry required for vesting option lapsed.

How to calculate amount of securities premium:

Exercised price received from employees	xxx
Expenses to be recognized	xxx
Total worth	xxx
Less: Face value per share	(xxx)
Securities premium	xxx

HOW TO ESTIMATE / CALCULATE EXIT OF EMPLOYEES



(2) Stock appreciation right (SAR) – Under this scheme employees are not offered any shares but employees are given option to claim in cash for any appreciation in agreed price.

Journal Entry

Employees compensation a/c
 To Provision for SAR a/c
 (Being amount of expenses recorded) Dr.

Profit and loss a/c
 To Employees compensation a/c
 (Being amount transferred) Dr.

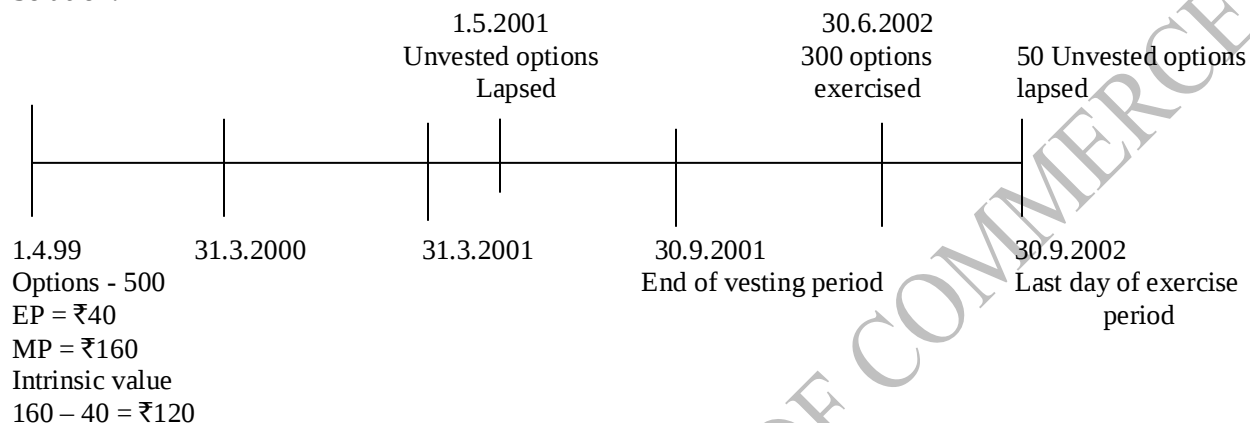
Calculation of expenses:

Option expected to exercise * F.V. * expired period / Total vesting period	Xxx
Less: Expenses recorded earlier	(-)
Expenses of current year	Xxx

Note: Expenses should be recognized at fair value and fair value should be reviewed at each year end.

QUESTION BANK

Q.1 A company grants 500 options on 1.4.99 at ₹40 when the market price is ₹160 the vesting period is two and a half years, the maximum exercise period is one year. Also 150 unvested options lapse on 1.5.2001. 300 options are exercised on 30.6.2002 and 50 vested options lapse at the end of the exercised period. Journalize. Face value per share is ₹100.

Solution:

Calculation of option expenses:

Year 1: $\frac{500 \times 120}{2.5} \times 1$		24,000
Year 2: $\frac{500 \times 120}{2.5} \times 2$	48,000	
Less: Expenses of earlier year	24,000	24,000
Year: 3 $\frac{350 \times 120}{2.5} \times 2.5$	42,000	
Less: Expenses of earlier years	48,000	(6,000)

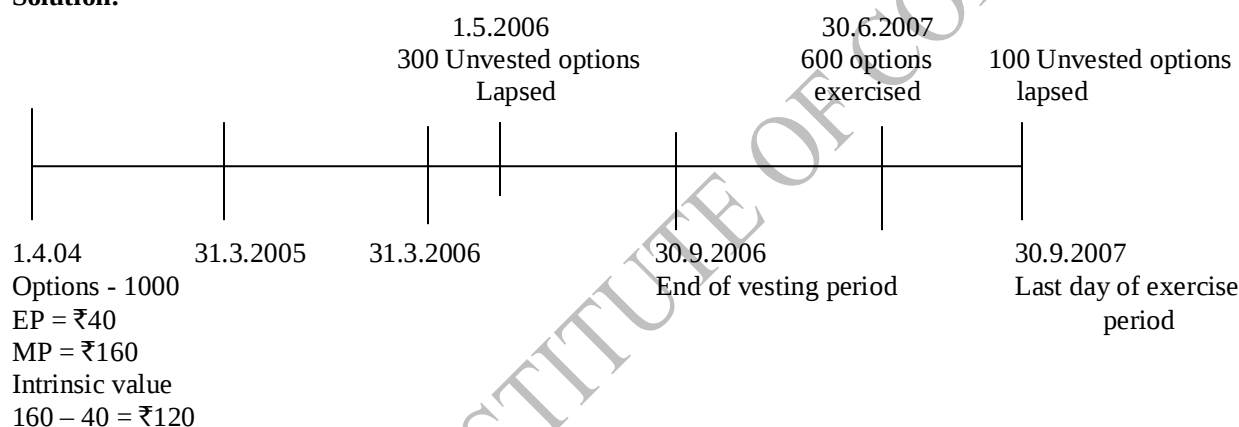
Journal Entries

31.3.2000	Employees Compensation A/c	Dr.	24,000	
	To Employees Stock Option A/c (being expenses recorded)			24,000
31.3.2000	Profit and Loss A/c	Dr.	24,000	
	To Employees Compensation A/c (being balance transferred to P&L A/c)			24,000
31.3.2001	Employees Compensation A/c	Dr.	24,000	
	To Employees Stock Option A/c (being expenses recorded)			24,000
31.3.2001	Profit and Loss A/c	Dr.	24,000	
	To Employees Compensation A/c (being balance transferred)			24,000
31.3.2002	Employees Stock Option A/c	Dr.	6000	
	To General Reserve A/c (being option expenses concerned)			6,000

30.6.2002	Bank A/c	Dr.	12,000	
	To Employees Stock Option A/c (being amount received)			12,000
	Employees Stock Option A/c	Dr.	48,000 (300 × 160)	
	To Equity share capital A/c			30,000
	To Securities premium A/c (being Shares allotted)			18,000
30.9.2002	Employees Stock Option A/c	Dr.	6,000 (50 × 120)	
	To General reserve A/c (being option cancelled)			6,000

Q.2 ABC grants 1,000 employees stock options on 1.4.2004 at ₹40, when market price is ₹160. The vesting period is 2.5 years and the maximum exercise period is one year. 300 unvested options lapse on 1.5.06. 600 options are exercised on 30.6.07. 100 vested options lapse at the end of the exercise period. Pass the journal entries giving suitable narrations. Face value per share is ₹100. [CA – F, May 2008]

Solution:



Calculation of option expenses:

Year 1: $\frac{1000 \times 120}{2.5} \times 1$		48,000
Year 2: $\frac{1000 \times 120}{2.5} \times 2$	96,000	
Less: Expenses of earlier year	48,000	48,000
Year: 3 $\frac{700 \times 120}{2.5} \times 2.5$	84,000	
Less: Expenses of earlier years	96,000	(12,000)

Journal Entries

(1)	Employees Compensation A/c	Dr.	48,000	
	To Employees Stock Option A/c (being expenses recorded)			48,000
(2)	Profit and Loss A/c	Dr.	48,000	
	To Employees Compensation A/c			48,000
(3)	Employees Compensation A/c	Dr.	48,000	
	To Employees Stock Option A/c			48,000
(4)	Profit and Loss A/c	Dr.	48,000	
	To Employees Compensation A/c			48,000
(5)	Employees Stock Option A/c	Dr.	12,000	
	To General Reserve A/c			12,000
(6)	Bank A/c	Dr.	24,000	
	To Employees Stock Option A/c			24,000
(7)	Employees Stock Option A/c	Dr.	96,000	
	To Equity share capital A/c			60,000
	To Securities premium A/c			36,000
(8)	Employees Stock Option A/c	Dr.	12,000	
	To General reserve A/c			12,000

Q.3 Yati Ltd. grants 100 stock options to each of its 1000 employees on 1.4.2005 for ₹20, depending upon the employees at the time of vesting of options. The market price of the share is ₹50. These options will vest at the end of year 1 if the earning of Yati Ltd. increases 16 % or it will vest at the end of year 2 if the average earning of two years increases by 13 % or lastly it will vest at the end of third year if the average earning of 3 years will increase by 10 %. 5,000 unvested options lapsed on 31.3.2006. 4,000 unvested options lapsed on 31.3.2007 and finally 3,500 unvested options lapsed on 31.3.2008. Following is the earning of Yati Ltd.

Year ended on	Earning (in %)
31.3.2006	14 %
31.3.2007	10 %
31.3.2008	7 %

At the end of 1st Year, Yati Ltd. estimates that at the end of 2nd year, the average earnings will be above 13 %, thus achieving vesting condition. 850 employees exercised their vested options within a year and remaining options were unexercised at the end of the contractual life. Pass journal entries for the above.

Solution:

1.4.05	31.3.2006	31.3.2007	31.3.2008	850 employee
Options – 100	If earnings – 16 %	If average	If average	exercise
Employees – 1,000	5,000 options	earnings – 13 %	earnings = 10 %	option
EP = ₹20	lapsed	4,000 options	3,500	
MP = ₹50	Actual – 14 %	lapsed	option lapsed	
Intrinsic value		Actual earnings – 10 %	Actual earnings – 7 %	
50 – 20 = ₹30	V ₂	Average = $14 + 10 / 2$	Average = 10.33 %	
		= 12 %		
		V ₃		

Calculation of option expenses:

Year: 1 $\frac{95,000 \times 30}{2} \times 1$		14,25,000
Year: 2 $\frac{91,000 \times 30}{3} \times 2$	18,20,000	
Less: Expenses recognized earlier	14,25,000	3,95,000
Year: 3 $\frac{87,500 \times 3}{3}$	26,25,000	
Less: Expenses recognized earlier	18,20,000	8,05,000

Journal Entries

(1)	Employees Compensation A/c	Dr.	14,25,000	
	To Employees Stock Option A/c (being expenses recorded)			14,25,000
(2)	Profit and Loss A/c	Dr.	14,25,000	
	To Employees Compensation A/c (being Expenses transferred to P&L A/c)			14,25,000
(3)	Employees Compensation A/c	Dr.	3,95,000	
	To Employees Stock Option A/c			3,95,000
(4)	Profit and Loss A/c	Dr.	3,95,000	
	To Employees Compensation A/c			3,95,000
(5)	Employees Compensation A/c	Dr.	8,05,000	
	To Employees Stock Option A/c			8,05,000
(6)	Profit and Loss A/c	Dr.	8,05,000	
	To Employees Compensation A/c			8,05,000
(7)	Bank A/c	Dr.	17,00,000 (85,000 × 20)	
	To Employees Stock Option A/c (being amount received)			17,00,000
(8)	Employees Stock Option A/c	Dr.	42,50,000 (85,000 × 50)	
	To Equity share capital A/c			8,50,000 (85,000 × 10)
	To Securities premium A/c (being Shares allotted to employees)			34,00,000 (85,000 × 40)
(9)	Employees Stock Option A/c	Dr.	75,000 (2,500 × 30)	
	To General reserve A/c (being option cancelled)			75,000

Q.4 A company announced a stock appreciation right on 1.4.06 for each of its 525 employees. The scheme gives the employees the right to claim cash payment equivalent to excess on market price of company's shares on exercise date over the exercise price ₹125 per share in respect of 100 shares, subject to condition of continuous employment for 3 years. The SAR is exercisable after 31.3.09 but before 30.6.09. The fair value of SAR was ₹21 in 2006 – 07, ₹23 in 2007 – 08 and ₹24 in 2008 – 09. In 2006 – 07 company estimates that 2 % of the employees shall leave the company annually. This was raised to 3 % in 2007 – 08. Actually, 15 employees left the company in 2006 – 07, 10 left in 2007 – 08 and 8 left in 2008 – 09. The SAR therefore actually vested to 492 employees. On 30.6.09, when the SAR was exercised, the intrinsic value was ₹ 25 per share. Show provision for SAR a/c by fair value method.

Solution:

	2 %	3 % 2 %	3 % 2 %	
	15 employees left	10 employees left	8 Employees left	
1.4.2006	31.3.2007	31.3.2008	31.3.2009	30.6.2009
Employees – 525	FV = ₹21	FV = ₹23	FV = ₹ 24	
Shares = 100			Actual = 492 employees	
Exercise price = 125				

Calculation of option expenses:

Year: 1 $\frac{(525 \times 98 \times .98 \times .98) \times 100 \times 21}{3} \times 1$		3,45,888
Year: 2 $\frac{(525 - 15) \times .97 \times .97 \times 100 \times 23}{3} \times 2$	7,35,784	
Less: Expenses recognized earlier	3,45,888	3,89,896
Year: 3 $\frac{492 \times 100 \times 24}{3} \times 3$	11,80,800	
Less: Expenses recognized earlier	7,35,784	4,45,016

Employees' compensation A/c

31.3.07			
To provision for SAR A/c	3,45,888	By profit & Loss A/c	3,45,888
	3,45,888		3,45,888
31.3.08			
To provision for SAR A/c	3,89,896	By profit & Loss A/c	3,89,896
	3,89,896		3,89,896
31.3.09			
To provision for SAR A/c	4,45,016	By profit & Loss A/c	4,45,016
	4,45,016		4,45,016

Provision for SAR A/c

		31.3.07	
To Balance c/d	3,45,888	By employees compensation	3,45,888

	3,45,888		3,45,888
		31.3.08	
To Balance c/d	7,35,784	By Balance b/d	3,45,888
		By employees compensation	3,89,896
	7,35,784		7,35,784
		31.03.09	
To Balance c/d	11,80,000	To Balance b/d	7,35,784
		By employees compensation	4,45,16
To Bank A/c (492 × 100 × 25)	12,30,000	By Balance b/d	11,80,800
		By profit & Loss A/c (B / f)	49,200
	12,30,000		12,30,000

Q.5 On 1.1.09 X Ltd. grants 200 stock options to each of its 300 employees. The options will vest at the end of 1st year if the production achieved during the year is 2,000 units; at the end of 2nd year, if average production achieved during two years is 1,900 units; at the end of 3rd year, if average production achieved during 3 years is 1,800 units. The employees should also remain in employment till the stipulated production is achieved. Fair value as on grant date is estimated at ₹40 per option.

On 31.12.09, 20 employees have left. Actual production was 1,950 units. X Ltd. estimates that at the end of 2nd year, the average production will be above 1,900 units, thus achieving the vesting condition. Therefore, estimated vesting period is 2 years. It also estimates that a further 30 employees will leave during the 2nd year.

On 31.12.2010, further 25 employees have left. But the actual average production was only 1,850 units. X Ltd. estimates that it will achieve the target of 1,800 units at the end of 3rd year. Therefore, estimated vesting period is revised to 3 years. It also estimates that a further 10 employees will leave during the 3rd year.

On 31.12.2011, further 15 employees have left. Actual average production was 1,820 units. Vesting conditions being satisfied, the options vested with the remaining employees on 31.12.2011. Give the amounts to be recognized for each year.

Solution:

1.1.09	31.12.2009	31.12.2010	31.12.2011
Employees – 300	If production is 2,000 units	If average production is 1,900 units	If average production is 1,800 units
Options – 200	Actual units – 1,950	Actual average production = 1,850 units	Actual average production = 1,820 units
FV = ₹40	V ₂	V ₃	

Calculation of expenses:

Year: 1 $\frac{(300 - 20 - 30) \times 200 \times 40}{2} \times 1$		10,00,000
Year: 2 $\frac{(300 - 20 - 25 - 30) \times 200 \times 40}{3} \times 2$	13,06,667	
Less: Expenses recognized earlier	10,00,000	3,06,667
Year: 3	19,20,000	

$\frac{(300 - 20 - 25 - 30) \times 200 \times 40}{3} \times 3$		
Less: Expenses recognized earlier	13,06,667	6,13,333

Q.6 On 1.1.09, Y Ltd. grants stock options to each of its 300 employees, which will vest at the end of 3rd year, provided the employees are in service at the end of 3rd year. The number of options per employee is 100 if average profit growth rate of the enterprise is 5 % to 10 %, 200 if the same is above 10 % but up to 15 % and 300 if the same is above 15 %. Fair value as on grant date is estimated at ₹40 per option.

On 31.1.2.2009, 20 employees have left. Actual average profit growth rate is 13 % till date. Y Ltd. expects the growth rate to continue and that further 30 employees will leave during next 2 years.

On 31.1.2.2010, further 25 employees have left. Actual average profit growth rate is 16 % till date. Y Ltd. expects the average rate at the end of next year to be 17 %. It also estimates that a further 10 employees will leave during the 3rd year. On 31.1.2.2011, further 15 employees have left. Actual average profit growth rate is 16.5 % till date. Give the amounts to be recognized for each year.

Solution:

20 Employees left	25 Employees left	15 employees left	
			31.12.2010
1.1.2009	31.12.09	Actual GR – 16 %	31.12.2011
Employees – 300	Actual GR – 13 %	Expected GR – 17 %	Actual GR – 16.50 %
Options:	expected GR – 13 %	Expected employees to	
100 if GR – 5 % to 10 %	Expected employees	be left in year 3 – 10	
200 if GR – 10 % to 15 %	left in next 2 years - 30		
300 if GR – Above 15 %			
FV - ₹40			

Calculation of expenses:

Year: 1		6,66,667
$\frac{(300 - 20 - 30) \times 200 \times 40}{3} \times 1$		
Year: 2	19,60,000	
$\frac{(300 - 20 - 25 - 10) \times 200 \times 40}{3} \times 2$		
Less: Expenses recognized earlier	6,66,667	12,93,333
Year: 3	28,80,000	
$\frac{(300 - 20 - 25 - 15) \times 200 \times 40}{3} \times 3$		
Less: Expenses recognized earlier	19,60,000	9,20,000

Q.7 On 1.1.2009, B Ltd. grants 1,000 stock options to each of its 300 employees, contractual life of the options being 7 years. There are no service conditions. The only condition is that the option vest in the employees when and only when share price rises from the present level of ₹50 to ₹80. Thereafter, the options are exercisable at any time during the remaining period of contractual life.

On 1.1.09, the enterprise estimates that the price will touch ₹80 at the end of year 5. It also estimates that the fair value per option to be ₹20. For 4 years, the enterprise estimates the number of employees to remain at the end of 5 years as 270, 275, 268 and 265. Actual number of employees left during 5 years is 8, 6, 7, 9 and 10 respectively. As against the estimates of the enterprise, the market price reached the stipulated price level only

at the end of 6th year. Further 5 employees left before the price level reached the stipulated level. Give the amounts to be recognized every year.

Solution:

	Left – 8	Left – 6	Left – 7	Left – 9	Left – 10	
1.1.2009	31.12.09	31.12.2010	31.12.2011	31.12.2012	31.12.2013	
Employees – 300	Emp. – 270	Emp. – 275	Emp. – 268	Emp. – 265		
Options – 1,000						
FV - ₹20						

Calculation of expenses:

Year ending 31.12.09: $\frac{270 \times 1000 \times 20}{5} \times 1$		10,80,000
Year ending 31.12.2010: $\frac{275 \times 1000 \times 20}{5} \times 2$	22,00,000	
Less: Expenses recognized earlier	10,80,000	11,20,000
Year ending 31.12.2011: $\frac{268 \times 1000 \times 20}{5} \times 3$	32,16,000	
Less: Expenses recognized earlier	22,00,000	10,16,000
Year ending 31.12.2012: $\frac{265 \times 1000 \times 20}{5} \times 4$	42,40,000	
Less: Expenses recognized earlier	32,16,000	10,24,000
Year ending 31.12.2013: $\frac{(300-8-6-7-9-10) \times 1000 \times 20}{5} \times 5$	52,00,000	
Less: Expenses recognized earlier	42,40,000	9,60,000

Q.8 The following particulars in respect of stock options granted by a company are available:

Grant date	1 st April, 2006
Number of employees covered	525
Number of options granted per employee	100
Vesting condition	Continuous employment for 3 years
Face value per share (₹)	100
Exercise price per share (₹)	125
Market price per share on grant date (₹)	149
Fair value of option per share on grant date	30
Vesting date	March 31, 2009
Exercise date	March 31, 2010

Position on 31.3.2007:

- (a) Estimated annual rate of departure – 2 %
- (b) Number of employees left - 15

Position on 31.3.2008:

- (a) Estimated annual rate of departure – 3 %
- (b) Number of employees left – 10

Position on 31.3.09:

- (a) Number of employees left - 8
- (b) Number of employees entitled to exercise option – 492

Position on 31.3.2010:

(a) Number of employees exercising the option - 480

(b) Number of employees not exercising the option – 12

Compute expenses to recognize in each year by (i) Fair value method (ii) Intrinsic value method and show important accounts in books of the company by both of the methods.

Solution:

Estimated departure – 2 % p.a.	Estimated annual departure – 3 %			
Employees left – 15	Left - 10	Left - 8		
1.4.2006	31.3.2007	31.3.2008	31.3.2009	31.3.2010
Employees – 525			492 employees	480 employees exercised option
Options – 100				
EP - ₹125				
MP - ₹149				
IV - ₹24				
FV - ₹30				

Fair Value Method: Calculation of expenses

Year: 1 $\frac{(525-15) \times 0.98 \times 0.98 \times 100 \times 30}{3} \times 1$		4,89,804
Year: 2 $\frac{(525-15-10) \times 0.97 \times 100 \times 30}{3} \times 2$	9,70,000	
Less: Expenses recognized earlier	4,89,804	4,80,196
Year: 3 $\frac{492 \times 100 \times 30}{3} \times 3$	14,76,000	
Less: Expenses recognized earlier	9,70,000	5,06,000

Employees' compensation A/c

31.3.07			
To Employees Stock Option	4,89,804	By Profit & Loss A/C	4,89,804
	4,89,804		4,89,804
31.3.08			
To Employees Stock Option	4,80,196	By Profit & Loss A/C	4,80,196
	4,80,196		4,80,196
31.3.09			
To Employees Stock Option	5,06,000	By Profit & Loss A/C	5,06,000
	5,06,000		5,06,000

Employees Stock Option A/c

		31.3.07	
To Balance c/d	4,89,804	By Employees compensation A/c	4,89,804
	4,89,804		4,89,804
		1.4.07	

To Balance c/d	9,70,000	By Balance b/d	4,89,804
		31.3.08	
		By Employees Comp.	4,80,196
			9,70,000
		1.4.08	
To Balance c/d	14,76,000	By Balance b/d	9,70,000
		31.3.09	
		By Employees Comp.	5,06,000
	14,76,000		14,76,000
		1.4.09	
To Equity Share Capital (480 × 100 × 100)	48,00,000	By Balance b/d	14,76,000
To Securities premium (480 × 55 × 100)	26,40,000	31.3.10	
To General reserve (12 × 100 × 30)	36,000	By Bank (480 × 100 × 125)	60,00,000
	74,76,000		74,76,000

(ii) Intrinsic value Method: Calculation of expenses

Year: 1 $\frac{(525 - 15) \times 0.98 \times 0.98 \times 100 \times 24}{3} \times 1$		3,91,843
Year: 2 $\frac{(525 - 15 - 10) \times 0.97 \times 100 \times 24}{3} \times 2$	7,76,000	
Less: Expenses recognized earlier	3,91,843	3,84,157
Year: 3 $\frac{492 \times 100 \times 24}{3} \times 3$	11,80,800	
Less: Expenses recognized earlier	7,76,000	4,04,000

Employees Stock Option A/c

		31.3.07	
To Balance c/d	3,91,843	By Employees compensation A/c	3,91,843
	3,91,843		3,91,843
		1.4.07	
To Balance c/d	7,76,000	By Balance b/d	3,91,843
		31.3.08	
		By Employees Comp.	3,84,157
	7,76,000		7,76,000
		1.4.08	
To Balance c/d	11,80,800	By Balance b/d	7,76,000
		31.3.09	
		By Employees Comp.	4,04,000
	11,80,800		11,80,800
		1.4.09	

To Share Capital	48,00,0000	By Balance b/d	11,80,800
To Securities premium (480 × 100 × 49)	23,52,000	By Bank(480 × 100 × 125)	60,00,000
To General reserve (12 × 100 × 24)	28,800		
	71,80,800		71,80,800

Employees' compensation A/c

31.3.07			
To Employees Stock option	3,91,843	By profit & Loss A/c	3,91,843
	3,91,843		3,91,843
31.3.08			
To Employees Stock option	3,84,157	By profit & Loss A/c	3,84,157
	3,84,157		3,84,157
31.3.09			
To Employees Stock option	4,04,000	By profit & Loss A/c	4,04,000
	4,04,000		4,04,000

Q.9 The following particulars in respect of stock options granted by a company are available:

Grant date	April 1, 2006
Number of employees covered	500
Number of options granted per employee	100
Fair value of option per share on grant date	25

Vesting condition:

- (a) If the company earns ₹120 crores or above after taxes in 2006 – 07, the option will vest on 31.3.2007.
 (b) If condition (a) is not satisfied but the company earns ₹250 crores or above after taxed in aggregate in 2006 – 07 and 2007 – 08, the option will vest on 31.3.2008.
 (c) If conditions (a) and (b) are not satisfied but the company earns ₹400 crores or above after taxes in aggregate in 2006 – 07, 2007 – 08 and 2008 – 09, the option will vest on 31.3.2009.

Position on 31.3.2007:

- (a) The company earned ₹ 115 crores after taxes in 2006 – 07.
 (b) The company expects to earn 140 crores in 2007 – 08 after taxes.
 (c) Expected vesting date: March 31, 2008
 (d) Number of employees expected to be entitled to option – 474.

Position on 31.3.2008:

- (a) The company earned ₹ 130 crores after taxes in 2007 – 08.
 (b) The company expects to earn 160 crores in 2008 – 09 after taxes.
 (c) Expected vesting date: March 31, 2009
 (d) Number of employees expected to be entitled to option – 465.

Position on 31.3.2009:

- (a) The company earned ₹165 crores after taxes in 2008 – 09.
 (b) Number of employees entitled to exercise option – 450
 Compute expenses to recognize in each year.

Solution:

1.4.2006	31.3.2007	31.3.2008	31.3.2009
Employees – 500	Earnings – 115 Cr.	Earnings – 130 Cr.	Earnings – 165
Cr.			
Options – 100	Estimated earnings – 140 Cr.	Expected earnings – 160 Cr.	Employees – 450
FV - ₹25	V ₂	V ₃	
	Employees – 474	Employees – 465	

Calculation of expenses:

Year: 1 $\frac{474 \times 100 \times 25}{2} \times 1$		5,92,500
Year: 2 $\frac{465 \times 100 \times 25}{3} \times 2$	7,75,000	
Less: Expenses recognized earlier	5,92,500	1,82,500
Year: 3 $\frac{450 \times 100 \times 25}{3} \times 3$	11,25,000	
Less: Expenses recognized earlier	7,75,000	3,50,000

Q.10 The following particulars in respect of stock options granted by a company are available:

Grant date	April 1, 2006
Number of employees covered	50
Number of options granted per employee	1,000
Fair value of option per share on grant date (₹)	9

The options will vest to employees serving continuously 3 years from vesting date, provided the share price is ₹ 70 or above at the end of 2008 – 09. The estimates of number of employees satisfying the condition of continuous employment were 48 on 31.3.07, 47 on 31.3.08. The number of employees actually satisfying the condition of continuous employment was 45. The share price at the end of 2008 – 09 was ₹ 68.

Compute expenses to recognize in each year and show important accounts in books of the company.

Solution:

1.4.2006	31.3.2007	31.3.2008	31.3.2009
Employees – 50	Employees – 48	Employees – 47	Employees – 45
Options – 1,000			Share price - ₹68
FV = ₹9			

Calculation of expenses:

Year: 1 $\frac{48 \times 1000 \times 9}{3} \times 1$		1,44,000
---	--	----------

Year: 2 $\frac{47 \times 1000 \times 9}{3} \times 2$	2,82,000	
Less: Expenses recognized earlier	1,44,000	1,38,000
Year: 3 $\frac{45 \times 1000 \times 9}{3} \times 3$	4,05,000	
Less: Expenses recognized earlier	2,82,000	1,23,000

Employees' compensation A/c

31.3.07			
To Employees Stock Option	1,44,000	By Profit & Loss A/C	1,44,000
	1,44,000		1,44,000
31.3.08			
To Employees Stock option	1,38,000	By Profit & Loss A/C	1,38,000
	1,38,000		1,38,000
31.3.09			
To Employees Stock option	1,23,000	By Profit & Loss A/C	1,23,000
	1,23,000		1,23,000

Employees Stock Option A/c

		31.3.07	
To Balance c/d	1,44,000	By Employees compensation A/c	1,44,000
	1,44,000		1,44,000
		1.4.07	
To Balance c/d	2,82,000	By Balance b/d	1,44,000
		31.3.08	
		By Employees Comp.	1,38,000
	2,82,000		2,82,000
		1.4.08	
To General Reserve	4,05,000	By Balance b/d	2,82,000
		31.3.09	
		By Employees Comp.	1,23,000
	4,05,000		4,05,000

Q.11 The following particulars in respect of stock options granted by a company are available:

Grant date 1st April, 2006

Number of employees covered 400

Number of options granted per employee 60

Nominal value per share (₹) 100

Exercise price per share (₹) 125

Shares offered were put in three groups. Group I was for 20 % of shares offered with vesting period of one year. Group II was for 40 % of shares offered with vesting period of two years. Group III was for 40 % shares offered with vesting period of three years. Fair value of option per share on grant date was ₹10 for group I, ₹12.50 for group II and ₹14 for group III.

Position on 31.3.2007:

- (a) Number of employees left - 40
- (b) Estimate of number of employees to leave in 2007 – 08 – 36
- (c) Estimate of number of employees to leave in 2008 – 09 – 34
- (d) Number of employees exercising options in group I – 350

Position on 31.3.2008:

- (a) Number of employees left - 35
- (b) Estimate of number of employees to leave in 2008 – 09 – 30
- (c) Number of employees exercising options in group II – 319.

Position on 31.3.2009:

- (a) Number of employees left - 28
- (b) Number of employees at the end of last vesting period – 297.
- (c) Number of employees exercising options in group III – 295.

Options not exercised immediately on vesting, were forfeited. Compute the expenses to recognize in each year and show important accounts in books of the company.

Solution:

	40 Employees left	35 Employees left	28 employees left
1.4.2006			
Employees – 400	31.3.2007	31.3.2008	31.3.2009
Options – 60	Group I - 350	Group II – 319	Group III – 295
Category options FV	Estimated to be	Estimated to be	
I 12 10	leave in 07 – 08 – 36	leave in 08 – 09 – 30	
II 24 12.50	Estimated to be		
III 24 14	leave in 08 – 09 – 34		
EP = ₹125			

Calculation of expenses:

Group I: Year: 1		42,000
$\frac{350 \times 12 \times 10}{1} \times 1$		
Group II: Year: 1		48,600
$\frac{(400 - 40 - 36) \times 24 \times 12.5}{2} \times 2$		
Year: 2	95,700	
$\frac{319 \times 24 \times 12.5}{2} \times 2$		
Less: Expenses recognized earlier	48,600	47,100
Group III: Year: 1		32,480
$\frac{(400 - 40 - 36 - 34) \times 24 \times 14}{3} \times 3$		
Year: 2	66,080	
$\frac{(400 - 40 - 35 - 30) \times 24 \times 14}{3} \times 2$		
Less: Expenses recognized earlier	32,480	33,600
Year: 3		

$\frac{295 \times 24 \times 14}{3} \times 3$	99,120	
Less: Expenses recognized earlier	66,080	38,040

Calculation of yearly expenses:

Group	Year 1	Year 2	Year 3
I	42,000	-	-
II	48,600	47,100	-
III	32,480	33,600	33,040
Total Expenses	1,23,080	80,700	33,040

Employees Stock Option A/c

		31.3.07	
To Equity Share capital (350 × 100 × 12)	4,20,000	By Employees compensation A/c	1,23,080
	4,20,000	By Bank A/c (350 × 125 × 12)	5,25,000
To Securities premium A/c (350 × 12 × 35)	1,47,000		
To Balance c/d	81,080		
	6,48,080		6,48,080
Share capital (319 × 24 × 100)	7,65,600	By Balance b/d	81,080
To Securities premium A/c (350 × 12 × 35)	2,87,100	By Employees Comp. A/c	80,700
To Balance c/d	66,080	By Bank (319 × 24 × 125)	9,57,000
	11,18,780		11,18,780
To Equity Share capital (295 × 100 × 24)	7,08,000	By Balance b/d	66,080
To Securities premium A/c (295 × 24 × 39)	2,76,100	By Employees Comp.	33,040
		By Bank (295 × 24 × 125)	8,85,000
	9,84,120		9,84,120

Employees' compensation A/c

31.3.07			
To Employees Stock option	1,23,080	By profit & Loss A/c	1,23,080
	1,23,080		1,23,080
31.3.08			
To Employees Stock option	80,700	By profit & Loss A/c	80,700
	80,700		80,700
31.3.09			
To Employees Stock option	33,040	By profit & Loss A/c	33,040
	33,040		33,040

Calculation of Securities Premium:

	Group I	Group II	Group III
	2006-07	2007-08	2008-09
Exercise Price received	125	125	125
Value of Service received	10	12.50	14

	135	137.50	139
Less: Nominal Value per share	100	100	100
Securities premium per share	35	37.50	39

Q.12 Grant date	1.4.2006
Number of employees covered	300
Number of options granted per employee	100
Vesting condition: continuous employment up to 31.3.09	
Face value per share	₹10
Exercise price per share	₹40
Fair value of option per share on grant date	₹20
Vesting date	March 31, 2009
Exercise date	July 31, 2009

The number of options to vest per employees shall depend on company's average annual earnings after tax during vesting period as per the table below: Average annual earnings after tax	Number of options per employee
Less than ₹100 crores	Nil
₹100 crores to less than ₹120 crores	30
₹120 crores to less than ₹150 crores	45
Above ₹150 crores	60

Position on 31.3.2007:

- (a) The company expects to earn ₹115 crores after tax on average per year during vesting period.
 (b) Number of employees expected to be entitled to option = 280

Position on 31.3.2008:

- (a) The company expects to earn ₹130 crores after tax on average per year during vesting period.
 (b) Number of employees expected to be entitled to option = 270.

Position on 31.3.2009:

- (a) The company expects to earn ₹128 crores after tax on average per year during vesting period.
 (b) Number of employees entitled to exercise option = 275.

Position on 31.7.09:

Number of employees exercising the option = 265.

Compute expenses to recognize in each year and show important accounts in books of the company.

Solution:

			31.7.09 Employees Exercised - 265
1.4.2006	31.3.2007	31.3.2008	31.3.2009
Employees – 300	Earnings – 115 Cr.	Earnings – 130 Cr.	Earnings – 128 Cr.
Options – 100	Employees = 280	Employees - 270	Employees - 275
EP = ₹40			
FV = ₹20			

Calculation of expenses:

Year: 1 $\frac{280 \times 30 \times 20}{3} \times 1$		56,000
Year: 2 $\frac{275 \times 45 \times 20}{3} \times 2$	1,62,000	
Less: Expenses recognized earlier	56,000	1,06,000
Year: 3 $\frac{275 \times 45 \times 20}{3} \times 3$	2,47,500	
Less: Expenses recognized earlier	1,62,000	85,500

Employees' compensation A/c

31.3.07			
To Employees Stock option A/c	56,000	By Profit & Loss A/C	56,000
	56,000		56,000
31.3.08			
To Employees Stock option A/c	1,06,000	By Profit & Loss A/C	1,06,000
	1,06,000		1,06,000
31.3.09			
To Employees Stock option A/c	85,500	By Profit & Loss A/C	85,500
	85,500		85,500

Employees Stock Option A/c

		31.3.07	
To Balance c/d	56,000	By Employees compensation A/c	56,000
	56,000		56,000
To Balance c/d	1,62,000	By Balance b/d	56,000
		By Employees Comp.	1,06,000
	1,62,000		1,62,000
To Balance c/d	2,47,500	By Balance b/d	1,62,000
		By Employees Comp. A/c	85,500
	2,47,500		2,47,500
To Equity Share capital (265× 45×10)	1,19,250	By Balance b/d	2,47,500
To Securities premium A/c (265×45) ×50	5,96,250	By Bank (265×45×40)	4,77,000
To General reserves (10×45×20)	9,000		
	7,24,500		7,24,500

Q.13 At the beginning of year 1, an enterprise grants 300 options to each of its 1,000 employees. The contractual life (comprising the vesting period and the exercise period) of options granted is 6 years. The other relevant terms of the grant are as below:

Vesting Period	3 Years
Exercise Period	3 Years
Expected Life	5 Years

Exercise Price	₹ 50
Market Price	₹ 50
Expected forfeitures per year	3%

The fair value of options, calculated using an option pricing model, is ₹ 15 per option. Actual forfeitures, during the year 1, are 5 percent and at the end of year 1, the enterprise still expects that actual forfeitures would average 3 percent per year over the 3-year vesting period. During the year 2, however, the management decides that the rate of forfeitures is likely to continue to increase, and the expected forfeiture rate for the entire award is changes to 6 percent per year. It is also assumed that 840 employees have actually completed 3 years vesting period. 200 employees exercise their right to obtain shares vested in them in pursuance of the ESOP at the end of year 5 and 600 employees exercise their right at the end of year 6, right of 40 employees expire unexercised at the end of year 6. Face value of one share of the enterprise is ₹10. Show the necessary journal entries. [CA – RTP – Nov. 2012]

Solution:

Year 4
200 employees
exercised

Actual Forfeiture – 5 %					
Year – 1		Year 2	Year – 3		Year 6
Employees – 1,000	Estimated that forfeiture		840 Employees		600 Emp.
Options – 300	for entire award – 6 % p.a.		fulfills condition		exercised
EP - ₹50					options
MP - ₹50					
FV - ₹15					
Expected forfeiture					
per annum – 3 %					

Calculation of expenses:

Year: 1		13,69,010
$\frac{300 \times 1000 \times .97 \times .97 \times .97 \times 15}{2} \times 1$		
Year: 2	24,91,752	
$\frac{(300 \times 1000 \times .94 \times .94 \times .94 \times 15)}{3} \times 2$		
Less: Expenses recognized earlier	13,69,010	11,22,742
Year: 3	37,80,000	
$\frac{300 \times 840 \times 15}{3} \times 3$		
Less: Expenses recognized earlier	24,91,752	12,88,248

Journal Entries

Year 1	Employees Compensation A/c	Dr.	13,69,010	
	To Employees Stock Option A/c			24,000
	(Being Compensation Expenses Recorded)			
	Profit and Loss A/c	Dr.	13,69,010	
	To Employees Compensation A/c			13,69,010
	(being balance transferred to P&L A/c)			
Year 2	Employees Compensation A/c	Dr.	11,22,742	
	To Employees Stock Option A/c			11,22,742

	(being compensation expenses recorded)			
	Profit and Loss A/c	Dr.	11,22,742	
	To Employees Compensation A/c (being Compensation expenses transferred to P&L A/c)			11,22,742
Year 3	Employees Stock Option A/c	Dr.	12,88,248	
	To Employees Stock option A/c (being expenses recorded)			12,88,248
	Profit and Loss A/c	Dr.	12,88,248	
	To Employees Compensation A/c (being expenses transferred to P&L A/c)			12,88,248
Year 5	Bank A/c	Dr.	(200 × 300 × 50) 30,00,000	
	To Employees Stock option A/c (being amount received from employees)			30,00,000
	Employees Stock option	Dr.	(200 × 300 × 65) 39,00,000	
	To Equity Share capital A/c (200 × 300 × 10)			6,00,000
	To Securities premium A/c (200 × 300 × 55) (being shares allotted to employees)			33,00,000
Year 6	Bank A/c	Dr.	(600 × 300 × 50) 90,00,000	
	To Employees Stock option A/c (being amount received from employees)			90,00,000
	Employees Stock option	Dr.	1,17,00,000	
	To Equity Share capital A/c (600 × 300 × 10)			18,00,000
	To Securities premium A/c (600 × 300 × 55) (being shares allotted to employees)			99,00,000
	Employees Stock Option A/c	Dr.	(40 × 300 × 15) 1,80,000	
	To General Reserve A/c (being option concern)			1,80,000

Q. 14 At the beginning of year 1, the enterprise grants 100 stock options to each of its 500 employees, conditional upon the employees remaining in the employment of the enterprise during the vesting period. The options will vest at the end of year 1 if the earnings of the enterprise increase by more than 18 percent; at the end of year 2 if the earnings of the enterprise increase by more than an average of 13 percent year over the two year period; and at the end of year 3 if the earnings of the enterprise increase by more than an average of 10 percent per year over the three year period. The fair value of the options, calculated at the grant date using an option pricing model, is ₹ 30 per option. No dividends are expected to be paid over the three-year period.

By the end of year 1, the earnings of the enterprise have increased by 14 percent, and 30 employees have left. The enterprise expects that earnings will continue to increase at a similar rate in year 2, and, therefore, expects that the options will vest at the end of years 2. The enterprise expects, on the basis of a weighted average probability, that a further 30 employees will leave during year 2, and, therefore, expects that options will vest in 440 employees at the end of year 2.

By the end of year 2, the earnings of the enterprise have increased by only 10 percent and, therefore, the options do not vest at the end of year 2. 28 employees have left during the year. The enterprise expects that a

further 25 employees will leave during year 3, and that the earnings of the enterprise will increase by at least 6 percent, there by achieving the average of 10 per cent per year.

By the end of year 3, 23 employees have left and the earnings of the enterprise have increased by 8 percent, resulting in an average increase of 10.67 per cent per year. Therefore, 419 employees received 100 shares each at the end of year 3. Calculate option expenses to be recognized every year. [RTP – May, 2012]

Solution:

	30 Left	28 Left	23 Left
Grant date	Year 1	Year 2	Year 3
Employees – 500	If earnings	If average	if average earnings
Options – 100	more than – 18 %	earnings – 13 %	10 %
FV - ₹30	Actual earnings – 14 %	Actual – 10 %	Actual – 8 %
	V_2	Average – $14 + 10 / 2$	Average –
	Estimated departure in	= 12 %	$14 + 10 + 8 / 3$
	Next year - 30	V_3	= 10.67 %
		Estimated departure in	Actual employees
		next year - 25	= 419

Calculation of expenses:

Year: 1		6,60,000
$\frac{(500 - 30 - 30) \times 100 \times 30}{2} \times 1$		
Year: 2	8,34,000	
$\frac{(500 - 30 - 28 - 25) \times 100 \times 30}{3} \times 2$		
Less: Expenses recognized earlier	6,60,000	1,74,000
Year: 3	12,57,000	
$\frac{419 \times 100 \times 30}{3} \times 3$		
Less: Expenses recognized earlier	8,34,000	4,23,000

Q.15 On 1.1.09, Surya Kiran Ltd. grants 200 stock options to each of its 300 employees, which will vest at the end of 3rd year, provided the employees are in service at the end of 3rd year. The exercise price per option is ₹60 if average annual output per employee is in the range of 100 units to 120 units, ₹50 if the same is in the range of 121 units to 130 units, ₹40 if the same is above 130 units.

Fair value as on the grant date is estimated at ₹50 per option if the exercise price is ₹60, ₹40 per option if the exercise price is ₹50 and ₹30 per option if the exercise price is ₹40.

On 31.12.09, 20 employees have left. Actual average annual output per employee is 115 till date. X Ltd. expects that it is most likely that the average output will be 122 over the 3 years and that further 30 employees will leave during next 2 years. On 31.12.2010, further 25 employees have left. Actual average annual output per employee is 132 till date. X Ltd. expects that it is most likely that the average output will be above 130 units over 3 years. It also estimates that a further 10 employees will leave during the 3rd year. On 31.12.2011, further 15 employees have left. Actual average annual output per employee is only 112 till date. Compute the amount to be recognized for each year. [RTP – Nov. 2010]

Solution:

	20 employees left	25 employees left	15 employees left
	31.12.2009	31.12.2010	31.12.2011
1.1.2009	Output = 115	Output - 132	Actual output - 112
Options – 200	Expected average	Expected average	
Employees – 300	output = 122	output – Above 130	
EP output FV	Estimated employees	Estimated employees	
60 100 – 120 50	left in 2 years – 30	left in 3 rd year - 10	
50 121 – 130 40			
40 Above 130 30			

Calculation of expenses:

Year: 1 $\frac{(300-20-30) \times 200 \times 40}{3} \times 1$		6,66,667
Year: 2 $\frac{(300-20-25-10) \times 200 \times 30}{3} \times 2$	9,80,000	
Less: Expenses recognized earlier	6,66,667	3,13,333
Year: 3 $\frac{(300-20-25-15) \times 200 \times 50}{3} \times 3$	24,00,000	
Less: Expenses recognized earlier	9,80,000	14,20,000

Q.16 A Ltd. provides you the following particulars in respect of stock options granted:

Grant date	April 1, 2008
Number of employees covered	1,050
Number of options granted per employee	50
Vesting condition: continuous employment for 3 years	
Nominal value per share (₹)	100
Exercise price per share (₹)	125
Market price per share on grant date (₹)	149
Vesting date	March 31, 2011
Exercise date	March 31, 2012
Fair value of option per share on grant date (₹)	30

Position on	31.3.09	31.3.2010	31.3.2011
Estimated annual rate of departure	2 %	3 %	
Number of employees left	30	20	16
Number of employees entitled to exercise option			984

On 31st March, 2012, 960 employees exercised the option and 24 employees did not exercise the option.

Required: Compute expenses to be recognized in each year by (i) Fair value method (ii) Intrinsic value method and show important accounts in the books of company by both the methods.

Q. 17 At the beginning of year 1, an enterprise grants stock options to each of its 100 employees working in the sales department. The stock options will vest at the end of year 3, provided that the employees remain in the employment of the enterprise, and provided that the volume of sales of a particular product increases by at least an average of 5 percent per year. If the volume of sales of the product increases by an average of between 5 percent and 10 percent per year, each employee will receive 100 stock options. If the volume of sales

increases by an average between 10 percent and 15 percent each year, each employee will receive 200 stock options. If the volume of sales increases by an average of 15 percent or more, each employee will receive 300 stock options.

On the grand date, the enterprise estimates that the stock options have a fair value of ₹ 20 per option. The enterprise also estimates that the volume of sales of the product will increase by an average of between 10 percent and 15 percent per year, and therefore expects that, for each employee who remains in service until the end of year 3, 200 stock options will vest. The enterprise also estimates, on the basis of a weighted average probability, 20 percent of employees will leave before the end of year 3.

By the end of year 1, seven employees have left and the enterprise still expects that a total of 20 employees will leave by the end of year 3. Hence, the enterprise expects that 80 employees will remain in service for the three-year period. Product sales have increased by 12 percent and the enterprise expects this rate of increase to continue over the next 2 years.

By the end of year 2, a further five employees have left, bringing the total to 12 to date. The enterprise now expects that only three more employees will leave during year 3, and therefore expects that a total of 15 employees will have left during the three-year period, and hence 85 employees are expected to remain. Product sales have increased by 18 percent, resulting in an average of 15 percent over the two years to date. The enterprise now expects that sales increase will average 15 percent or more over the three-year period, and hence expects each sales employee to receive 300 stock options at the end of year 3.

By the end of year 3, a further two employees have left. Hence, 14 employees have left during the three-year period, and 86 employees remain. The sales of the enterprise have increased by an average of 16 percent over the three years. Therefore, each of the 86 employees' receives 300 stock options.

Solution:

	7 Left	5 left	2 left	
		Sales – 12 %	Sales 18 %	Average – 16 %
Beginning of		Estimated employees	Hence average	Employees - 86
Year 1		remains in	12 + 18 / 2 = 15 %	
Employees – 100		employment - 80	Estimated departure	
Sales options			of employees in	
5% – 10 %	100		next year - 3	
10 % - 15 %	200			
Above 15 %	300			
FV - ₹20				

Calculation of expenses:

Year: 1 $\frac{80 \times 200 \times 20}{3} \times 1$		1,06,667
Year: 2 $\frac{85 \times 300 \times 20}{3} \times 1$	3,40,000	
Less: Expenses recognized earlier	1,06,667	2,33,333
Year: 3 $\frac{86 \times 200 \times 20}{3} \times 1$	5,16,000	
Less: Expenses recognized earlier	3,40,000	1,76,000

Q. 18 At the beginning of year 1, an enterprise grants 10,000 stock options to a senior executive, conditional upon the executive remaining in the employment of the enterprise until the end of year 3. The exercise price is ₹ 40. However, the exercise price drops to ₹ 30 if the earnings of the enterprise increase by at least an average of 10 percent per year over the three-year period.

On the grant date, the enterprise estimates that the fair value of the stock options, with an exercise price of ₹ 30, is ₹ 16 per option. If the exercise price is ₹ 40, the enterprise estimates that the stock options have a fair value of ₹ 12 per option. During year 1, the earnings of the enterprise increased by 12 percent, and the enterprise expects that earnings will continue to increase at this rate over the next two years. The enterprise, therefore, expects that the earnings target will be achieved, and hence the stock options will have an exercise price of ₹ 30. During year 2, the earnings of the enterprise increased by 13 percent, and the enterprise continues to expect that the earnings target will be achieved.

During year 3, the earnings of the enterprise increased by only 3 percent, and therefore the earnings target was not achieved. The executive completes three years' service, and therefore satisfies the service condition. Because the earnings target was not achieved, the 10,000 vested stock options have an exercise price of ₹ 40. Calculate expenses to be recognized for each year.

Answer: Expenses to be recognized for each year:

Year: 1 = ₹53,333; Year: 2 = ₹53,334; Year: 3 = ₹13,333

Q. 19 At the beginning of year 1, an enterprise grants 10,000 stock options to a senior executive, conditional upon the executive remaining in the employment of the enterprise until the end of year 3. However, the stock options cannot be exercised unless the share price has increased from ₹ 50 at the beginning of year 1 to above ₹ 65 at the end of year 3. If the share price is above ₹ 65 at the end of year 3, the stock options can be exercised at any time during the next seven years, i.e. by the end of year 10.

The enterprise applies a binomial option pricing model, which into account the possibility that the share price will exceed ₹ 65 at the end of year 3 (and hence the stock options become exercisable) and the possibility that the share price will not exceed ₹ 65 at the end of year 3 (and hence the options will not become exercisable). It estimates the fair value of the stock options with this market condition to be ₹ 24 per option.

Q. 20 At the beginning of year 1, an enterprise grants 10,000 stock options with a ten-year life to each of ten senior executives. The stock options will vest and become exercisable immediately if and when the share price of the enterprise increases from ₹ 50 to ₹ 70, provided that the executive remains in service until the share price target is achieved.

The enterprise applies a binomial option pricing model, which takes into account the possibility that the share price target will be achieved during the ten-year life of the options, and the possibility that the target will not be achieved. The enterprise estimates that the fair value of the stock options at grant date is ₹ 25 per option. From the option pricing model, the enterprise determines that the mode of the distribution of possible vesting dates is five years. In other words, of all the possible outcomes, the most likely outcome of the market condition is that the share price target will be achieved at the end of year 5. Therefore, the enterprise estimates that the expected vesting period is five years. The enterprise also estimates that two executives will have left by the end of year 5, and therefore expects that 80,000 stock options (10,000 stock options × 8 executives) will vest at the end of year 5.

Throughout years 1-4, the enterprise continues to estimate that a total of two executives will leave by the end of year 5. However, in total three executives leave, one in each of years 3, 4 and 5. The share price target is achieved at the end of year 6. Another executive leaves during year 6, before the share price target is achieved.

Q. 21 An enterprise offers all its 1,000 employees the opportunity to participate in an employee stock purchase plan. The employees have two weeks to decide whether to accept the offer. Under the terms of the plan, the employees are entitled to purchase a maximum of 100 shares each. The purchase price will be 20 percent less than market price of the shares of the enterprise at the date the offer is accepted, and the purchase price must be paid immediately upon acceptance of the offer. All shares purchased must be held in trust for the employees, and cannot be sold for five years. The employee is not permitted to withdraw from the plan during that period. For example, if the employee ceases employment during the five-year period.

In total, 800 employees accept the offer and each employee purchases, on average, 80 shares, i.e., the employees purchase a total of 64,000 shares. The weighted-average market price of the shares at the purchase date is ₹ 30 per share, and the weighted-average purchase price is ₹ 24 shares.

Q. 22 At the beginning of year 1, an enterprise grants 100 stock options to each of its 500 employees. The grant is conditional upon the employee remaining in service over the next three years. The enterprise estimates that the fair value of each option is ₹ 15. On the basis of a weighted average probability the enterprise estimates that 100 employees will leave during the three-year period and therefore forfeit their rights to the stock options.

Suppose that 40 employees leave during year 1. Also suppose that by the end of year 1, the share price of the enterprise has dropped, and the enterprise reprises its stock options, and that the reprised stock options vest at the end of year 3. The enterprise estimates that a further 70 employees will leave during years 2 and 3, and hence the total expected employees departures over the three-year vesting period is 110 employees. During year 2, a further 35 employees leave, and the enterprise estimates that a further 30 employees will leave during year 3, to bring the total expected employee departures over the three-year vesting period to 105 employees. During year 3, a total of 28 employees leave, and hence a total of 103 employees ceased employment during the vesting period. For the remaining 397 employees, the stock options vested at the end of year 3.

The enterprise estimates that, at the date of reprising, the fair value of each of the original stock options granted (i.e., before taking into account the reprising) is ₹ 5 and that the fair value of each reprised stock option is ₹ 8.

Q.23 An entity grants 100 cash share appreciation rights (SARs) to each of its 500 employees, on condition that the employees remain in its employment for the next three years. During 1st year 35 employees leave. The entity estimates that a further 60 will leave during 2nd and 3rd years. During 2nd year 40 employees leave and the entity estimates that a further 25 will leave during 3rd year. During 3rd year 22 employees leave. At the end of the 3rd year 150 employees exercise their SARs, another 140 employees exercise their SARs at the end of 4th year and the remaining 113 employees exercise their SARs at the end of 5th year.

The entity estimates that fair value of the SARs at the end of each year in which a liability exists as shown below. At the end of year 3, all SARs held by the remaining employees vest. The intrinsic values of the SARs at the date of exercise (which equals the cash paid out) at the end of years 3, 4 and 5 are also shown below.

Year	Fair value	Intrinsic value
1	₹14.40	-
2	₹15.50	-
3	₹18.20	₹15.00
4	₹21.40	₹20.00
5		₹25.00

Calculate option expenses.

Answer:

Option expenses: ₹1,94,400; ₹2,18,933; ₹2,72,127; ₹61360; ₹40,680

Q.24 At the beginning of year 1, an enterprise grants 300 cash share appreciation rights (SARs) of its 1,000 employees. The SARs are granted on the condition that the employees remain in its employment for the next three years. The contractual life (comprising the vesting period of 3 years and the exercise period 2 years) of SARs is 5 years. Expected forfeitures per year will be 3 %. Actual forfeiture, during 1st year are 5% and at the end of 1st year the enterprise still expects that actual forfeitures would average 3% per year over the 3 – years vesting period. During the 2nd year however, the management decides that the rate of forfeitures is likely to continue to increase and the expected forfeiture rate for the entire award is changed to 6 % per year. It is also assumed that 840 employees have actually completed 3 years vesting period. However, it is also assumed that at the end of 3rd year 400 employees exercise their SARs, another 300 employees exercise their SARs at the end of 4th year and the remaining 140 employees exercise their SARs at the end of 5th year. The enterprise

estimates the fair value of the SARs at the end of each year in which a liability exists and the intrinsic value of the SARs at the end of the years 3, 4 and 5. The value estimated by the enterprise are as below:

Year	Fair value	Intrinsic value
1	₹15.30	-
2	₹16.50	-
3	₹19.20	₹16.00
4	₹21.30	₹21.00
5		₹26.00

Calculate option expenses.

Solution:

	Left = 5 %				
5		End of		Year 4	Year
Beginning		year 1	Year 2	Year 3	300 employees
Of year 1		Expected		840 employees	exercise SARs
Employees – 1,000		forfeiture per		completed 3	140 employees
Options – 300		annum for		years' service	exercise
Expected forfeiture		entire award		400 employees	
Per annum – 3 %		period – 6 %		exercise SARs	

Calculation of option expenses:

Year: 1		13,96,390
$\frac{1,000 \times 0.97 \times 0.97 \times 0.97 \times 300 \times 15.30}{3} \times 1$		
Year: 2	27,40,927	
$\frac{1,000 \times 0.94 \times 0.94 \times 0.94 \times 300 \times 16.50}{3} \times 2$		
Less: Expenses recognized earlier	13,96,390	13,44,537
Year: 3		
Expenses for outstanding SAR:	25,34,400	
$440 \times 300 \times 19.20$		
Expenses in respect of cash paid	19,20,000	
$400 \times 300 \times 16.00$		
	44,54,400	
Less: Expenses recognized earlier	27,40,927	17,13,473
Year: 4		
Expenses for outstanding SAR	8,94,600	
$140 \times 300 \times 21.30$		
Expenses in respect of cash paid	18,90,000	
$300 \times 300 \times 21$		
	27,84,600	
Less: Expenses of previous year	25,34,400	2,50,200
Year: 5		
Expenses in respect of cash paid	10,92,000	
$140 \times 300 \times 26$		
Less: expenses recognized earlier	8,94,600	1,97,400

Q.25 On 1st April, 2009 A Ltd. announced a stock appreciation right (SAR) for each of its employees. The scheme gives the employees the right to claim cash payment equivalent to excess on market price of

company's shares on exercise date over the exercise price ₹125 per share in respect of 50 shares, subject to condition of continuous employment for 3 years. The SAR is exercisable after 31st March 2012 but before 30th June, 2012. The fair value of SAR was 24 in 2009 – 2010, ₹26 in 2010 – 2011 and ₹27 in 2011 – 2012. In 2009 – 2010 the company estimates that 3 % of the employees shall leave the company annually. This was revised to 4 % in 2010 – 2011. Actually 20 employees left the company in 2009 – 2010, 10 employees left in 2010 – 2011 and 6 left in 2011 – 2012. The SAR therefore actually vested to 984 employees. On 30th June 2012, when the SAR was exercised, the intrinsic value was ₹25 per share. Show provision for SAR account by fair value method.

Q.26 Q Ltd. announced a stock appreciation rights (SAR) scheme to its employees on 1st April, 2011. The silent features of the scheme are given below:

- (1) The scheme will be applicable to employees who have completed three years of continuous service with the company.
- (2) Each eligible employee can claim cash payment amounting to the excess market price of the company's share on exercise date over exercise price in respect of 60 shares.
- (3) The exercise price is fixed at ₹75 per share.
- (4) The option to exercise the SAR is open from 1st April 2014 for 45 days and the same vested on 975 employees.
- (5) The intrinsic value of the company's share on date of closing (15th May 2014) was ₹30 per share.
- (6) The fair value of the SAR was ₹20 in 2011 – 2012, ₹25 in 2012 – 2013 and ₹27 in 2013 – 2014.
- (7) In 2011 – 2012, the expected rate of employee attrition was 5 % which rate was doubled in the next year.
- (8) Actual attrition year wise was as under:

2011 – 2012	35 employees, of which 5 had served the company for less than 3 years
2012 – 2013	30 employees of which 20 employees served for more than 3 years
2013 – 2014	20 employees of which 5 employees served for less than 3 years

You are required to show the provision for stock appreciation rights account by fair value method.

[CA – May, 2014]

Solution:

Calculation of number of employees eligible for SAR scheme:

Vested employees	975
Add: Employees left during 2011 – 12 after completing 3 years' service (35 - 5)	30
Add: Employees left during 2012 – 13 after serving more than 3 years' service	20
Add: Employees left during 13 – 14 after serving 3 years (20 - 5)	15
Total eligible employees	1,040

Left = 30			
1.4.2011 condition Employees = 1,040 Shares = 60 Exercise price = ₹75 Fair value = ₹20 Expected departure – 5 %	31.3.2012 Expected Departure – 10 % fair value - ₹25	31.3.2013 Fair value = ₹27	975 employees completed

Calculation of expenses to be recognized for each year:

Year: 1 $\frac{1,040 \times 0.95 \times 0.95 \times 0.95 \times 60 \times 20}{3} \times 1$		3,56,668
Year: 2 $\frac{(1,040 - 30) \times 0.90 \times 0.90 \times 60 \times 25}{3} \times 2$	8,18,100	

Less: Expenses recognized earlier	3,56,668	4,61,432
Year: 3 $\frac{975 \times 60 \times 27}{3} \times 3$	15,79,500	
Less: Expenses recognized earlier	8,18,100	7,61,400

Provision for SAR a/c

Particulars	₹	Particulars	₹
2011 – 12		2011 – 12	
To Balance c/d	3,56,668	By Employees compensation a/c	3,56,668
2012 – 13		2012 – 13	
To Balance c/d	8,18,800	By Balance b/d	3,56,668
		By Employees compensation a/c	4,61,432
2013 – 14		2013 – 14	
To Balance c/d	15,79,500	By Balance b/d	8,18,100
		By Employees compensation a/c	7,61,400
2014 – 15		2014 – 15	
To Bank a/c (975 * 60 * 30)	17,55,000	By Balance b/d	15,79,500
		By Profit and loss a/c	1,75,500

MODIFICATION IN EMPLOYEES STOCK OPTION PLAN:

Whenever there is any change in issued ESOP plan, it is termed as modification in plan. Such modification can be favourable for employees or unfavourable for employees.

If Modification is unfavourable for the employees, then such modification should be ignored and expenses should be recognized as per original plan.

If modification is favourable for the employees then company has to recognized additional expenses arises due to modification for the remaining vesting period in the following manner:

Fair value of option as per modified plan	xxx
Less: Fair value of original option as on date of modification	(xxx)
Additional expenses due to modification in plan	xxx

Note: There will be no change in original expenses. It should be calculated in usual manner.

Q. 27 At the beginning of year 1, the enterprise grants 1,000 stock options to each member of its sales team, conditional upon the employees remaining in the employment of the enterprise for three years, and the team selling more than 50,000 units of a particular product over the three-year period. The fair value of the stock options is ₹ 15 per option date of grant.

During year 2, the enterprise increases the sales target to 1, 00,000 units. By the end of year 3, the enterprise has sold 55,000 units, and the stock options do not vest. Twelve members of the sales team have remained in service for the three-year period.

Q.28 The following particulars in respect of stock options granted by a company are available:

Grant date	1.4.2007
Number of employees covered	600
Number of options granted per employee	60
Vesting condition	Continuous employment for 3 years
Nominal value per share (₹)	100

Exercise price per share (₹)	125
Vesting date	31.3.2010
Exercise date	31.3.2011
Fair value of option per share on grant date (₹)	14

Position on 31.3.2008:

- (i) Number of employees left - 30
- (ii) Estimate of number of employees to leave in 2008 – 2009 and 2009 – 2010 – 70
- (iii) Exercise price was reduced to ₹120
- (iv) Fair value of original option on 31.3.2008 = ₹13
- (v) Fair value of option at reduced exercise price on 31.3.2008 = ₹15
- (vi) Vesting date for modified option was March 31, 2010

Position on 31.3.2009:

- (i) Number of employees left = 35
- (ii) Estimate of number of employees to leave in 2009 – 10 = 30

Position on 31.3.2010:

- (i) Number of employees left = 28
- (ii) Number of employees entitled to exercise options = 507

Position on 31.3.2011:

- (i) Number of employees exercising the option = 500
 - (ii) Number of employees not exercising the option = 7
- Compute the amount of expenses the company should recognized in each of the years 2007 – 08, 2008 – 09 and 2009 – 2010 and show important accounts in the books of the company.

CALCULATION OF BEPS AND DEPS UNDER ESOP

(A) Calculation of BEPS

$$\text{BEPS} = \frac{\text{Earnings}}{\text{No. of equity shares}}$$

Statement of BEPS:

Particulars	Year 1	Year 2
Net profit before amortization of ESOP cost	Xxx	xxx
Less: ESOP cost	(xxx)	(xxx)
Earnings (A)	Xxx	xxx
No. of equity shares (B)	Xxx	xxx
EPS (A / B)	Xxx	xxx

(B) Calculation of DEPS

$$\text{DEPS} = \frac{\text{Earnings}}{\text{No. of equity shares (including potential shares)}}$$

Calculation of potential equity shares:

Particulars	Year 1	Year 2
(A) Total number of options		
Actual Number of employees at the year-end (i)	Xxx	xxx
No. of options per employee (ii)	Xxx	xxx
Total no. of options (i x ii)	Xxx	xxx
(B) No. of options for future benefits		
(i) No. of options for exercise price	Xxx	xxx
(ii) No. of options for unamortized ESOP cost	Xxx	xxx

Total no. of options for future benefits (i + ii) (B)	Xxx	xxx
No. of potential equity shares (A – B)	Xxx	xxx

$$\text{No. of options for exercise price} = \frac{\text{Total no. of options} \times \text{EP}}{\text{FV per share}}$$

$$\text{No. of options for unamortized cost} = \frac{\frac{\text{Total no. of options} \times \text{FV of option}}{\text{Total vesting period}} \times \text{Period unexpired}}{\text{FV per share}}$$

Calculation of DEPS:

$$\text{DEPS} = \frac{\text{Earnings}}{\text{No. of equity shares (including potential shares)}}$$

Q.29 At the beginning of year 1, an enterprise grants 300 stock options to each of its 1,000 employees, conditional upon the employees remaining in the employment enterprise for two years. The fair value of the stock options, at the date of grant, is ₹ 10 per option and the exercise price is ₹ 50 per share. The other relevant terms of the grant and assumptions are as below:

- The number of employees expected to complete two years vesting period, at the beginning of the plan, is 900. 50 employees are expected to leave during the each of the year 1 and year 2 and, consequently, the options granted to them are expected to be forfeited.
 - Actual forfeitures, during the vesting period, are equal to the expected forfeitures and 900 employees have actually completed two-years vesting period.
 - The profit of the enterprise for the year 1 and year 2, before amortization of compensation cost on account of ESOPs, is ₹ 25, 00,000 and ₹ 28, 00,000 respectively.
 - The fair value of shares for these years was ₹ 57 and ₹ 60 respectively.
 - The enterprise has 5, 00,000 shares of ₹ 10 each outstanding at the end of year 1 and year 2.
- Compute the Basic and Diluted EPS, ignoring tax impacts, for the year 1 and year 2. [RTP – May, 2013]

Solution:

Calculation of expenses to be recognized for each year:

Year: 1 $\frac{900 \times 300 \times 10}{2} \times 1$		₹13,50,000
Year: 2 $\frac{900 \times 300 \times 10}{2} \times 2$	27,00,000	
Less: Expenses recognized earlier	13,50,000	13,50,000

Calculation of Basic earnings per share:

Particulars	Year 1	Year 2
Net profit before amortization of ESOP cost	25,00,000	28,00,000
Less: ESOP cost	13,50,000	13,50,000
Earnings available for equity shareholders	11,50,000	14,50,000
Number of equity shares	5,00,000	5,00,000
BEPS $\frac{\text{Earnings}}{\text{Number of shares}}$	2.30	2.90

Calculation of potential equity shares:

Particulars	Year 1	Year 2
Actual number of employees	950 (1,000 - 50)	900 (1,000 - 50 - 50)
Options per employee	300	300
(A) Total number of options	2,85,000 (950 * 300)	2,70,000 (900 * 300)

(B) Number of options for future benefits:		
(i) In respect of exercise price	$\frac{2,85,000 \times 50}{57} = 2,50,000$	$\frac{2,70,000 \times 50}{60} = 2,25,000$
(ii) In respect of unamortized cost	$\frac{2,85,000 \times 10 \times 1/2}{57} = 25,000$	-
No. of options for future benefits (B)	2,75,000	2,25,000
Potential equity shares (A – B)	10,000	45,000

Calculation of DEPS:

	Year 1	Year 2
Net profit available for equity shareholders	11,50,000	14,50,000
Number of equity shares (Including potential equity shares)	5,10,000	5,45,000
DEPS	2.255	2.661

Q.30 A Ltd. provides you the following particulars in respect of stock options granted:

Grant date	April 1, 2008
Number of employees covered	1200
Number of options granted per employee	50
Vesting condition: continues employment for 3 years	
Nominal value per share (₹)	10
Exercise price per share (₹)	45
Vesting date	31.3.2011
Exercise date	31.3.2012
Fair value of option per share on grant date (₹)	15
Number of outstanding shares	4,00,000

Position on	31.3.09	31.3.2010	31.3.2011
Number of employees left	30	40	22
Number of employees entitled to exercise option	1080	1104	1108
Fair value of original option / FV of shares	60	66	72
Profit before amortization of ESOP cost (₹lakhs)	11.90	12.62	13.79

On 31st May, 2012, 1100 employees exercised the option and 8 employees did not exercise the option.

Required:

- Compute expenses to be recognized in each year by fair value method.
- Compute Basic and Diluted EPS for each year.
- Show important accounts in books of the company.

Solution:

(a) Calculation of expenses to be recognized for each year:

Year: 1 $\frac{1080 \times 50 \times 15}{3} \times 1$		2,70,000
Year: 2 $\frac{1,104 \times 50 \times 15}{3} \times 2$	5,52,000	
Less: Expenses recognized in earlier period	2,70,000	2,82,000
Year: 3 $\frac{1,108 \times 50 \times 15}{3} \times 3$	8,31,000	
Less: Expenses recognized in earlier period	5,52,000	2,79,000

(b) Calculation of BEPS:

Particulars	2008 – 09	2009 – 10	2010 – 2011
Profit before amortization of ESOP cost	11,90,000	12,62,000	13,79,000

Less: ESOP cost	2,70,000	2,82,000	2,79,000
Earnings	9,20,000	9,80,000	11,00,000
Number of shares	4,00,000	4,00,000	4,00,000
Basic earnings per shares	2.30	2.45	2.75

Calculation of potential equity shares:

	2008 – 09	2009 – 10	2010 – 11
Actual number of employees	1,170	1,130	1,108
Options per employee	50	50	50
(A) Total number of options	58,500	56,500	55,400
(B) Number of options for future benefits			
(i) In respect of exercise price	$\frac{58,500 \times 45}{60} = 43,875$	$\frac{56,500 \times 45}{66} = 38,523$	$\frac{55,400 \times 45}{72} = 34,625$
(ii) In respect of unamortized ESOP cost	$\frac{58,500 \times 15 \times 2/3}{60} = 9,750$	$\frac{58,500 \times 15 \times 2/3}{60} = 4,280$	-
Total (B)	53,625	42,803	34,625
Potential equity shares (A - B)	4,875	13,697	20,775

Calculation of DEPS:

	2008 – 09	2009 – 10	2010 – 2011
Earnings available for equity shareholders	9,20,000	9,80,000	11,00,000
Number of equity shares (Including potential equity shares)	4,04,875	4,13,697	4,20,775
DEPS	2.27	2.37	2.61

Employees compensation a/c

Year 2008 – 09	Year 2008 – 09
To ESO a/c	

Q.31 PQ Ltd. grants 100 stock options to each of its 1,000 employees on 1-4-2013, conditional upon the employee remaining in the company for 2 years. The fair value of the option is ₹18 on the grant date and the exercise price is ₹55 per share. The other information is given as under:

- The no. of employees expected to satisfy service condition are 930 in the 1st year and 850 in the 2nd year.
 - 40 employees left the company in the 1st year of service and 880 employees have actually completed 2 year vesting period.
 - The profit of the enterprise before amortization of the compensation cost on account of ESOPs is as follows:
 - ₹18,50,000
 - ₹22,00,000
 - The fair value of share for these years was ₹ 80 and ₹ 88 respectively.
 - The company has 6 lakhs shares of ₹ 10 each outstanding at the end of both years.
- Compute basic and diluted EPS for both the years (ignore the tax impacts). [RTP – May, 2016]

Answer:

(i) Expenses to be recognized - ₹7,65,000; ₹8,19,000

(ii) BEPS – Year: 1 – ₹1.81; Year: 2 – ₹2.30

(iii) Potential equity shares – Year: 1- 19,200 shares; Year: 2 – 33,000 shares

(iv) DEPS – Year: 1 - ₹1.75; Year: 2 - ₹2.18

Q.32 The following particulars in respect of stock options granted by a company are available:

Number of shares	5,00,000
Grant date	1.4.2013
Number of employees covered	750
Number of options granted per employees	75
Vesting condition: Continuous employment for 3 years	
Nominal value per share	₹10
Exercise price per share	₹35
Vesting date	31.3.2016
Exercise date	31.3.2017
Fair value of option per share on grant date	₹21

Position on 31.3.2014:

- (a) Number of employees expected to satisfy service condition = 680
- (b) Number of employees left = 20
- (c) Profit before amortization of ESOP cost = ₹12.35 lakhs
- (d) Fair value per share = ₹50

Position on 31.3.2015:

- (a) Number of employees expected to satisfy service condition = 700
- (b) Number of employees left = 15
- (c) Profit before amortization of ESOP cost = ₹13.60 lakhs
- (d) Fair value per share = ₹60

Position on 31.3.2016:

- (a) Number of employees left = 10
- (b) Number of employees entitled to exercise option = 705
- (c) Profit before amortization of ESOP cost - ₹14.58 lakhs
- (d) Fair value per share - ₹70

Position on 31.3.2017:

- (a) Number of employees exercising the option - 700
 - (b) Number of employees not exercising the option – 5
- Required:
- (i) Prepare ESO account and Employees compensation account.
 - (ii) Calculate BEPS and DEPS for the years 2013 – 14 to 2015 – 16

Answer:

(i) Expenses to be recognized: Year 13 – 14 - ₹3,57,000; Year 14 – 15 - ₹3,78,000; Year 15 – 16 - ₹3,75,375

(ii) BEPS: Year 13 – 14 - ₹1.756; Year 14 – 15 - ₹1.964; Year 15 – 16 - ₹2.165

(iii) Potential equity shares: Year 13 – 14 – 1,095 shares; Year 14 – 15 – 16,088 shares; Year 15 – 16 – 26,437 shares.

(iv) DEPS: Year 13 – 14 = ₹1.75; Year 14 – 15 = ₹1.90; Year 15 – 16 = ₹2.06

CASH ALTERNATIVE ESOP PLAN

Whenever employees are given option to take shares or cash in settlement of ESOP, such ESOPs are called cash alternative ESOPs. Following steps are applied under such plan.

Step: 1 Calculate value of ESOP / Shares obligation:

(A) Fair value of equity settlement (No. of shares expected to be issued * Fair value)	xxx
---	-----

(Being amount received)

(iii) ESO a/c

Dr.

To Equity share capital a/c

To Securities premium a/c

(Being shares issued)

Q.33 A company announced a share – based payment plan for its employees on 1.4.2007, subject to a vesting period of 3 years. By the plan, the employees can (i) either claim difference between exercise price ₹150 per share and market price of those shares on vesting date in respect of 10,000 shares or (ii) can subscribe to 12,000 shares at exercise price ₹150 per share, subject to lock – in – period of 5 years. On 1.4.2007, fair value of the option, without considering restrictions on transfers was ₹30 and that after considering restrictions on transfer was ₹27. The fair value estimates, without considering transfer restrictions were ₹31.50, ₹32.70 and ₹34 respectively, at the end of 2007 – 08, 2008 – 09 and 2009 – 2010. Show important accounts in the books of the company if employees opt (i) cash settlement (ii) equity settlement. [Study material]

Q.34 On 1.1.2010, Happy Ltd. grants to its senior officer, a right to choose either 250 shares (with some post – vesting restrictions) or a cash payment equal to value of 200 shares, conditional upon remaining in service for 3 years. Fair value of a share without considering post – vesting restrictions is ₹70 on 1.1.2010, ₹75 on 31.12.2010, ₹80 on 31.12.2011 and ₹85 on 31.12.2012. Fair value of a share after taking into account post – vesting restrictions is ₹68 on 1.1.2010. Face value per share is ₹10. Give the amounts to be recognized each year. Also, give the journal entries for settlement if (i) Employee chooses cash payments (ii) Employee chooses shares. [CA – RTP, Nov. 2013]

Solution:

Value of ESOP:

Fair value of equity settlement (250 * 68)	17,000
Fair value of cash settlement (200 * 70)	14,000
Value of ESOP	3,000

Expenses per annum under ESOP = $\frac{3,000}{3} = 1,000$ per annum

Expenses to be recognized for SAR:

Year: 1 $\frac{200 \times 75}{3} \times 1$		5,000
Year: 2 $\frac{200 \times 80}{3} \times 2$	10,667	
Less: Expenses recognized earlier	5,000	5,667
Year: 3 $\frac{200 \times 85}{3} \times 3$	17,000	
Less: Expenses recognized earlier	10,667	6,333

Journal entries

31.12.2010	Employees compensation a/c	Dr.	6,000	
	To Provision for SAR a/c			5,000
	To ESO a/c			1,000
31.12.2010	Profit and loss a/c	Dr.	6,000	
	To Employees compensation a/c			6,000
31.12.2011	Employees compensation a/c	Dr.	6,667	

	To Provision for SAR a/c			5,667
	To ESO a/c			1,000
31.12.2011	Profit and loss a/c	Dr.	6,667	
	To Employees compensation a/c			6,667
31.12. 2012	Employees compensation a/c	Dr.	7,333	
	To Provision for SAR a/c			6,333
	To ESO a/c			1,000
31.12.2012	Profit and loss a/c	Dr.	7,333	
	To Employees compensation a/c			7,333
	IF OPT FOR CASH SETTLEMENT:			
(i)	Provision for SAR a/c	Dr.	17,000	
	To Bank a/c			17,000
(ii)	ESO a/c	Dr.	3,000	
	To General reserve a/c			3,000
	IF OPT FOR EQUITY SETTLEMENT:			
(i)	Provision for SAR a/c	Dr.	17,000	
	To ESO a/c			17,000
(ii)	ESO a/c	Dr.	20,000	
	To Equity share capital a/c			2,500
	To Securities premium a/c			17,500

Q.35 Kush Ltd. announced a share based payment plan for its employees who have completed 3 years of continuous service, on 1st April, 2010. The plan is subject to a 3 year vesting period. The following information is supplied to you in this regard:

(i) The eligible employees can either have the option to claim the difference between the exercise price of ₹144 per share and the market price in respect of the share on vesting date in respect of 5,000 shares or such employees are entitled to subscribe to 6,000 shares at the exercise price.

(ii) Any shares subscribed to by the employees shall carry a 3 year lock in restriction. All shares carry face value of ₹10.

(iii) The current fair value of the shares at (ii) above is ₹60 and that in respect of freely tradable shares is higher by 20 %.

(iv) The fair value of the shares not subjected to lock in restriction at the end of each year increases by a given % from its preceding value as under:

	2010 – 2011	2011 – 2012	2012 – 2013
% of increase	6	10	15

You are required to draw up the following accounts under both options:

- Employee compensation account
- Provision for liability component account
- ESOP outstanding account

[CA – Nov. 2013]

Solution:

(i) Calculation of various fair values:

Current fair value per share subject to lock	₹60
Fair value per share not subject to lock (60 + 20 %)	₹72
Fair value per share not subject to lock on 31.3.2011 (72 + 6 %)	₹76.32

Fair value per share not subject to lock on 31.3.2012 (76.32 + 10 %)	₹83.95
Fair value per share not subject to lock on 31.3.2013 (83.95 + 15 %)	₹96.54

(ii) Calculation of value of ESOP:

Value of equity settlement (6,000 * 60)	3,60,000
Value of cash settlement (5,000 * 72)	3,60,000
Value of ESOP	Nil

(iii) Calculation of expenses under SAR:

Year: 1 $\frac{5,000 \times 76.32}{3} \times 1$		1,27,000
Year: 2 $\frac{5,000 \times 83.95}{3} \times 2$	2,79,833	
Less: Expenses recognized earlier	1,27,000	1,52,633
Year: 3 $\frac{5,000 \times 96.54}{3} \times 3$	4,82,700	
Less: Expenses recognized earlier	2,79,833	2,02,867

Employees compensation A/c

2010 – 11		2010 – 2011	
To Provision for SAR a/c	1,27,200	By Profit and loss a/c	1,27,200
2011 – 12		2011 – 2012	
To Provision for SAR a/c	1,52,633	By Profit and loss a/c	1,52,633
2012 – 13		2012 – 13	
To Provision for SAR a/c	2,02,867	By Profit and loss a/c	2,02,867

Provision for SAR A/c

Particulars	₹	Particulars	₹
2010 – 11		2010 – 11	
To Balance c/ d	1,27,200	By Employee compensation a/c	1,27,200
2011 – 12		2011 – 2012	
To Balance c/d	2,79,833	By Balance b/d	1,27,200
		By Employees compensation a/c	1,52,633
2012 – 2013		2012 – 13	
To Balance c/d	4,82,700	By Balance b/d	2,79,833
		By Employees compensation	2,02,867

Alternative: 1 If opt for cash settlement:

Provision for SAR a/c

Particulars	₹	Particulars	₹
To Bank (5,000 * 96.54)	4,82,700	By Balance b/d	4,82,700

Alternative: 2 If opt for equity settlement:

ESO a/c

Particulars	₹	Particulars	₹
To Equity share capital a/c	60,000	By Provision for SAR a/c	4,82,700
To Securities premium a/c	12,86,700	By Bank a/c (6,000 * 144)	8,64,000
	13,46,700		13,46,700

Q.36 An enterprise grants to an employee the right to choose either a cash payment equal to the value of 1,000 shares, or 1,200 shares. The grant is conditional upon the completion of three years' service. If the employee chooses the equity alternative, the shares must be held for three years after vesting date. The face value of shares is ₹ 10 per share.

At grant date, the fair value of the shares of the enterprise (without considering post-vesting restrictions) is ₹ 50 per share. At the end of years 1, 2 and 3, the said fair value is ₹ 52, ₹ 55 and ₹ 60 per share respectively. The enterprise does not expect to pay dividends in the next three years. After taking into account the effects of the post-vesting transfer restrictions, the enterprise estimates that the grant date fair value of the equity alternative is ₹ 48 per share.

At the end of year 3, the employee chooses:

Scenario 1: The cash alternative

Scenario 2: The equity alternative

ESPP (EMPLOYEES SHARE PURCHASE PLAN):

Whenever shares are offered to employees at a lower price than its fair value, these are called employees share purchase plan. Under such plan generally some lock – in – period is imposed on employees for transfer of shares. Due to such post – vesting restriction on transfer fair value per share is different from market price and expenses should be recognized on the basis of such reduced price.

Expenses = Fair value per share under post – vesting restriction – Exercise price

Following entries are journalized under ESPP plan:

(i) Employees compensation a/c Dr.
 To Employees stock option a/c
 (Being expenses recognized for ESPP)

(ii) At the time of receiving exercise price Dr.
 Bank a/c
 To Employees stock option a/c
 (Being amount received from employees)

(iii) At the time of issuing shares: Dr.
 Employees stock option a/c
 To Equity share capital a/c
 To Securities premium a/c

(iv) Entry for options lapsed: Dr.
 Employees stock options a/c
 To General reserve a/c

(v) Employees compensation expenses transferred to profit and loss account: Dr.
 Profit and loss a/c
 To Employees compensation a/c

Q.37 On April 1, 2006, a company offered 100 shares to each of its 500 employees at ₹40 per share. The employees are given a month to decide whether or not to accept the offer. The shares issued under the plan shall be subject to lock – in on transfer for 3 years from grant date. The market price of shares of the company on the grant date is ₹50 per share. Due to post – vesting restrictions on transfer, the fair value of shares issued

under the plan is estimated at ₹48 per share. On 30th April, 2006, 400 employees accepted the offer and paid ₹40 per share purchased. Nominal value of each share is ₹10. Record the issue of shares in books of the company under the aforesaid plan. [CA – May, 2013]

Solution:

Expenses to be recognized = 48 – 40 = ₹8 per option

Journal entries

(i)	Employees compensation a/c	Dr.	3,20,000	
	To Employees stock option a/c			3,20,000
(ii)	Bank a/c	Dr.	16,00,000	
	To Employees stock option a/c			16,00,000
(iii)	Employees stock option a/c	Dr.	19,20,000	
	To Equity share capital a/c			4,00,000
	To Securities premium a/c			15,20,000
(iv)	Profit and loss a/c	Dr.	3,20,000	
	To Employees compensation a/c			3,20,000

Q.38 A company has its share capital divided into shares of ₹10 each. On 1st April, 2010, it granted 5,000 employees stock option at ₹50, when the market price was ₹140. The options were to be exercised between 1.12.2010 to 28.2.2011. The employees exercised their options for 4,800 shares only; remaining options lapsed. Pass the necessary journal entries for the year ended 31.3.2011, with regard to employee's stock option. [IPCC – Nov. 2011]

Solution:

EP = 50 ; MP = 140 ; I.V. = 140 – 50 = 90

(1)	Employees Compensation A/c	Dr.	(5000 × 90) 4,50,000	
	To Employees Stock Option A/c (being compensation expenses recorded)			4,50,000
(2)	Bank A/c	Dr.	(4800 × 50) 2,40,000	
	To Employees Stock Option A/c (being amount received from employees)			2,40,000
(3)	Employees Stock Option A/c	Dr.	6,72,000	
	To Equity Share capital A/c (4,800 × 10)			48,000
	To Securities premium A/c (4,800 × 130) (being shares allotted to employees)			6,24,000
(4)	Employees Stock option A/c	Dr.	18,000 (200 × 90)	
	To General Reserve A/c (being option Lapsed)			18,000
(5)	Profit and Loss A/c	Dr.	4,50,000	
	To Employees Compensation A/c (being compensation expenses transferred to P&L A/c)			4,50,000

Q.39 A company has its share capital divided into shares of ₹10 each. On 1st April, 2010, it granted 20,000 employees stock options at ₹40 when the market price was ₹130. The options were to exercised between 1st January 2011 to 15th March 2011. The employees exercised their options for 18,000 shares only; remaining options lapsed. The company closes its books on 31st March every year. Pass journal entries with regard to employee's stock options. [IPCC – May, 2011]

Solution: MP = ₹130; EP = ₹40 ; I.V. = 130 – 40 = ₹90

(1)	Employees Compensation A/c	Dr.	18,00,000 (20,000 × 90)	
	To Employees Stock Option A/c (being compensation expenses recorded)			18,00,000
(2)	Bank A/c	Dr.	(18,000 × 40) 7,20,000	
	To Employees Stock Option A/c (being amount received from employees)			7,20,000
(3)	Employees Stock Option A/c	Dr.	(18000 × 130) 23,40,000	
	To Equity share capital A/c			1,80,000
	To Securities premium A/c (being Shares allotted to employees)			21,60,000
	Employees Stock Option A/c	Dr.	1,80,000	
	To General reserve A/c (being option lapsed)			1,80,000
(4)	Profit and Loss A/c	Dr.	18,00,000	
	To Employees Compensation A/c (being compensation expenses transferred to P&L A/c)			18,00,000

Q. 40 On 1st April, 2010 a company offered 100 shares to each of its 500 employees at ₹50 per share. The employees are given a month to accept the offer. The shares issued under the plan shall be subject to lock – in on transfer for three years from the grant date. The market price of shares of the company on the grant date is ₹60 per share. Due to post – vesting restrictions on transfer, the fair value of shares issued under the plan is estimated at ₹56 per share. On 30th April, 2010, 400 employees accepted the offer and paid ₹50 per share purchased. Nominal value of each share is ₹10. Record the issue of share in the books of the company under the aforesaid plan. [IPCC – RTP – May, 2012]

Solution:

Expenses to be recognized per option = 56 – 50 = ₹6 per option

Journal entries

(i)	Employees compensation a/c	Dr.	2,40,000	
	To Employees stock option a/c			2,40,000
(ii)	Bank a/c	Dr.	20,00,000	
	To Employees stock option a/c			20,00,000
(iii)	Employees stock option a/c	Dr.	22,40,000	
	To Equity share capital a/c			4,00,000
	To Securities premium a/c			18,40,000
(iv)	Profit and loss a/c	Dr.	2,40,000	
	To Employees compensation a/c			2,40,000

ADDITIONAL PRACTICE QUESTIONS

Q.41 A company announced a Stock Appreciation Right (SAR) on 01/04/2011 for each of its 600 employees. The scheme gives the employees the right to claim cash payment equivalent to excess on market price of company's shares, on exercise date, over the exercise price ₹ 130 per share in respect of 100 shares, subject to the condition of continuous employment of 3 years. The SAR is exercisable after 31/03/14 but before 30/06/14.

Particulars	2011 – 12	2012 – 13	2013 – 14
Fair value of SAR	25	28	32
Actual number of employees left	25	15	10
Company estimation for left employees	3 %	5 %	-

On 30/06/2014 when SAR was exercised, the intrinsic value per share was ₹35 per share. Show Provision for SAR account by fair value method. [CA – Nov. 2015]

Q.42 Virtual Limited granted on 1st April 2011, 1,00,000 Employees Stock Options at ₹ 40, when the market price was ₹ 60. These options will vest at the end of year 1, if the earnings of Virtual Limited is more than 15% or it will vest at the end of the year 2, if the average earnings of two years is more than 12% or lastly it will vest at the end of third year, if the average earnings of 3 years will be 9% or more. 6000 unvested options lapsed on 31st March 2012. 5500 unvested options lapsed on 31st March 2013 and finally 3000 unvested options lapsed on 31st March 2014. The earnings of Virtual Limited was as follows:

Year ended on	Earnings in %
31.3.2012	13 %
31.3.2013	9 %
31.3.2014	7 %

Employees exercised for 85,000 stock options which vested in them at the first opportunity and the balance options were lapsed. Pass necessary journal entries and show the necessary working.

[CA – Nov. 2014]

Q.43 At the beginning of year 1, an enterprise grants 300 options to each of its 1,000 employees. The contractual life of the option granted is 6 years. Other relevant information is as follows:

Vesting period	3 years
Exercise period	3 years
Expected life	5 years
Exercise price	₹50
Market price	₹50
Expected forfeiture per annum	3 %

The option granted vest according to a graded schedule of 25 % at the end of the year 1, 25 % at the end of the year 2 and the remaining 50 % at the end of year 3.

You are required to calculate total compensation expenses for the options expected to vest and cost and cumulative cost to be recognized at the end of all the 3 years assuming that expected forfeiture rate does not change during the vesting period.

(a) The fair value of these options, computed based on their respective expected lives are ₹10, ₹13 and ₹15 per option respectively.

(b) The Intrinsic value of the options at the grant date is ₹6 per option.

[CA – Nov. 2016]

SARVAGYA INSTITUTE OF COMMERCE

VALUE ADDED STATEMENT

Value added statements are based on two concepts

UK concept – Known as Enterprise concept.

- GVA
-

US concept – Known as Wealth Generation Concept.

EVA (Economic value added)
MVA (Market value added)

Gross value added/ Net value added (GVA / NVA) – According to UK concept, Profit is calculated for 6 persons. These persons are:

- Employees
- Directors
- Government
- Providers of long term finance
- Shareholders
- Entity (Legal body)

Such profit is called value added. Value added before depreciation is called gross value added.

$$NVA = GVA - \text{Depreciation}$$

Note – If nothing is mentioned in the question, then we will always calculate GVA.

Note – There is no standard format for preparing GVA / NVA.

Value added statement

Sales		Xxx
Add: Direct income (Sale of scrap, Royalty)		Xxx
Total (A)		Xxx
Expenditure / Cost of bought in material/ service		
All expenses – Direct or indirect except		
Employees cost		
Directors cost		
Government taxes		
Interest on long term finance		
Dividend / Shareholders charge		
Any reserve		
Depreciation		
Total (B)		Xxx
Value added by trading/ manufacturing activity (A - B)		Xxx
Add: Indirect income		Xxx
Add/ Less: Extraordinary items		Xxx
Gross value added		Xxx
Application statement:		
	Amount	%
Towards employees	xxx	Xx
Towards directors	xxx	Xx
Towards government taxes	xxx	Xx
Towards providers of long term finance	xxx	Xx
Towards shareholders	xxx	Xx
Towards entity	xxx	Xx

Important notes:

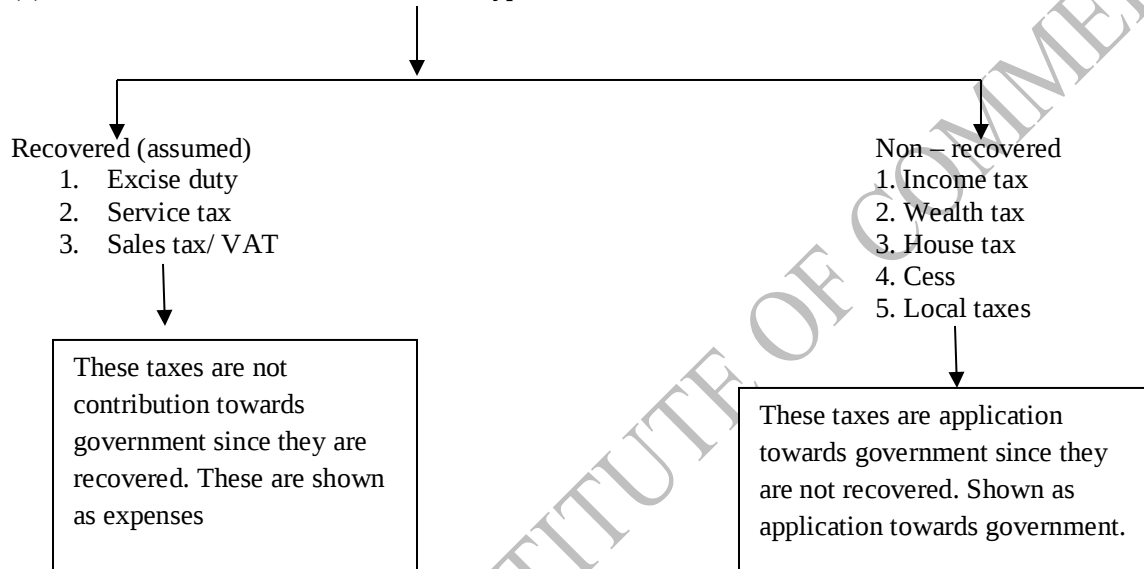
(1) Employees include permanent, temporary workers, white collared, casual workers and trainee etc. Amount paid / payable to employees can be in cash or in kind.

- ❖ Staff welfare is considered as application.
- ❖ Official tour and travelling is considered as expenses.
- ❖ Auditors are not employees.

(2) Directors – Directors includes whole time director/ part time director, managing director, executive director, non executive directors. Benefits can be in cash or in kind.

- ❖ Directors sitting fees in considered as expenses.

(3) Government taxes – Taxes can be two types



- ❖ Provision for deferred tax is considered as application towards entity.

(4) Providers of finance – Providers of finance means long term finance.

- ❖ Bank overdraft and working capital loans are always short term.
- ❖ Debentures are considered as long term loans.

(5) Shareholders – Shareholders includes equity and preference shareholders. All dividends will be included in application. CDT on dividend is application towards government.

(6) Towards entity includes all reserves generated during the year.

- ❖ Retained earnings during the year.
- ❖ Depreciation is application towards entity in case of GVA.

ECONOMIC VALUE ADDED

Economic value added is primarily a benchmark to measure earnings efficiency. Stern Stewart & Co. of USA has got a registered trademark for this concept. EVA as a residual income measure of financial performance, is simply the operating profit after tax less a charge for the capital, equity as well as debt, used in the business.

Calculation of EVA:

$$EVA = [ROOC - WACC] OC$$

ROOC = Return on operating capital

WACC = Weighted average cost of capital

OC = Operating capital

ROOC = Net operating profit after tax (NOPAT)/ OC * 100

Calculation of NOPAT:

EBIT (earnings before interest and tax)	Xxx
Less: Non – operating income	Xxx
Add: Non – operating expenses	
Operating EBIT	Xxx
Less: Economic taxes	Xxx
NOPAT	Xxx

Calculation of operating capital:

Equity share capital	Xxx
Add: reserves and surplus	Xxx
Less: Losses	Xxx
Add: Preference share capital	Xxx
Add: Long term debts	Xxx
Total capital	Xxx
Less: Non – operating assets	Xxx
Operating capital	Xxx

Note: Operating capital means capital invested in business at the time of calculation of EVA.

Calculation of WACC:

Sources	Amount	Weights	Cost of capital (after tax)	WACC
Equity	Xxx	Xxx	xxx	Xxx
Preference shares	Xxx	Xxx	xxx	Xxx
Debentures	Xxx	Xxx	xxx	Xxx
Other long term loans	Xxx	Xxx	xxx	Xxx
				Xxx

Notes:

(1) Cost of equity: using CAPM

$$K_e = R_f + \beta (R_m - R_f)$$

$R_m - R_f$ = Market premium

Note: If more than one beta are given, then we should consider highest beta.

MARKET VALUE ADDED

This is value recorded as wealth due to increment in market price of equity, preference and debt. This shows premium over book value that securities have.

Statement of MVA:

(A) Market value of securities:	
Equity shares	xxx
Preference shares	xxx
Debt	xxx
Total market value	xxx
(B) Book value of securities:	
Equity shares (including reserves)	xxx
Preference shares	xxx
Debt	xxx
Total (B)	xxx
MVA (A - B)	xxx

Notes:

(a) If market value of equity is not available, then book value of securities should be considered.

(b) MVA can be calculated only for the entities having listed securities.

QUESTION BANK FOR GROSS VALUE ADDED STATEMENT

Q.1 From the following profit and loss account of K Ltd., prepare a gross value added statement. Show also the reconciliation between gross value added and profit before taxation:

	Notes	₹ in lakhs	₹ in lakhs
Income:			
Sales			206.42
Other income			10.20
			216.62
Expenditure:			
Production and operational expenses	1	166.57	
Administration expenses	2	6.12	
Interest and other charges	3	8.00	
Depreciation		5.69	186.38
Profit before tax			30.24
Provision for tax			3.00
Profit after tax			27.24
Investment allowance reserve written back			0.46
Balance as per last balance sheet			1.35
			29.05
Transferred to:			
General reserve		24.30	
Proposed dividend		3.00	27.30
Surplus carried to balance sheet			1.75
			29.05

Notes:

(1) Production and operational expenses:

	₹ in lakhs
Increase in stock	30.50
Consumption of raw material	80.57
Consumption of stores	5.30
Salaries, wages, bonus and other benefits	12.80
Cess and local taxes	3.20
Other manufacturing expenses	34.20
	166.57

(2) Administration expenses include inter – alia audit fees of ₹1,00,000, salaries and commission to directors ₹ 2.20 lakhs and provision for doubtful debts ₹2.50 lakhs.

(3) Interest and other charges:

	₹ in lakhs
On fixed loan from financial institutions	3.90
On debentures	1.80
On working capital loans from bank	2.30
	8.00

[CA – RTP – May, 2005]

Solution:

Value Added Statement		(₹ in lakhs)	
Sales			206.42
			<u>206.42</u>
Cost of bought in material and Service			
Production and operational expenses (166.57 – 12.80 – 3.20)		150.57	
Adm. Expenses		3.92	

(6.12 – 2.20)			
Interest and other charges		2.30	156.79
VA by trading activities			49.63
Add: other income			10.20
		GVA	59.83
Application Statement:		%	
Toward employees	12.80	21.39	
Towards directors	2.20	3.68	
Towards Govt. taxes			
Cess & Local tax	3.20		
Prov. For tax	3.00	6.20	10.36
Towards LT finance providers	5.70	9.53	
Towards share holders	3.00	5.01	
Towards entity :			
(24.30 - .46) = 23.84 , (1.75 – 1.35) = 0.40			
(5.69 + 23.84 + 0.40)	29.93	50.03	
	59.83	100	

Reconciliation Statement:

GVA		59.83
(-) Employees cost	11.80	
(-) Director's cost	2.20	
(-) Cess & local tax	3.20	
(-) Interest on Debentures	1.80	
(-) Interest on loan	3.90	
(-) Depreciation	5.69	29.59
PBT		30.24

Q.2 The following is the profit and loss account of F Ltd. from which you are required to prepare a gross value added statement and reconcile the same with profit before taxation.

	₹ in ('000)
Sales	28,500
Other income	750
	29,250
Expenditure:	
Operating cost	25,600
Excise duty	1,700
Interest on bank overdraft	100
Interest in 12 % debentures	1,150
	28,550
Profit before depreciation	700
Less: Depreciation	250
Profit before tax	450
Tax provision	270
Net profit after tax	180
Less: transfer to replacement reserve	30
	150
Less: Dividend	50
Retained profit	100

Note:

(i) Sales are net after deducting discounts, returns and sales tax.

(ii) Operating cost includes ₹ ('000) 10,200 as wages, salaries and other benefits to employees.

(iii) Bank overdraft is a temporary source of finance.

(iv) Provision for tax includes ₹ ('000) 70 for deferred tax.

[RTP – May, 06]

Solution:

Value Added Statement

Sales			28,500
Cost of material and service			
Operating cost (25,600 – 10,200)		15,400	
Excise duty		1,700	
Interest on Debenture		100	17,200
VA by Trading activities			11,300
Add: other income			750
GVA			12,050
Application Statement:		%	
Towards employees	10,200	84.65	
Towards govt. (270 – 70)	200	1.66	
Towards LTF Providers	1,150	9.54	
Towards share holders	50	0.42	
Towards entity (250 + 30 + 70 + 100)	450	3.73	
	12,050	100	

Reconciliation Statement:

GVA			12,050
(-) Wages & Salaries		10,200	
(-) Dep.		250	
(-) Deb. Interest		1,150	11,600
PBT			450

Q.3 From the following information in respect of Pretext Ltd. , prepare a value added statement for the year 2005:

	₹ ('000)
Turnover	2,300
Plant and machinery (net)	1,080
Depreciation on plant and machinery	275
Dividends to ordinary shareholders	146
Debtors	195
Creditors	127
Total stock of all materials, WIP and finished goods	
Opening stock	160
Closing stock	200
Raw materials purchased	625
Cash at bank	98
Printing and stationery	22
Auditor's remuneration	28
Retained profits (opening balance)	994
Retained profits for the year	288
Rent, rates and taxes	165
Other expenses	85
Ordinary share capital issued	1,500
Interest on borrowings	40
Income tax for the year	276

Wages and salaries	327
Employees state insurance	35
PF – contribution	28

Calculate the value added per employee, average earnings per employee and sales per employee on the basis that 95 employees work in Pretext Ltd. [RTP – Nov. 06]

Solution:

Value Added Statement

Turnover				2,300
Cost of bought in material and services				
Material (160 + 625 – 200)			585	
Printing and stationery			22	
Auditor's remuneration			28	
Rent, Rates & taxes			165	
Other exp.			85	885
GVA				1,415
Application Statement:				
Towards employees				
Wages	327			
ESO	35	390		
PF	28			
Towards govt.		276		
Towards LTF Providers		40		
Towards share holders		146		
Towards entity (288 + 275)		563		
		1,415	100	

VA per employee = 14, 15,000/95 = 14,895

Avg. earnings per employee = 3, 90,000/95 = 4,105

Sales Per employee = 23, 00,000/95 = 24,211

Q.4 On the basis of the following profit and loss account of Zed Ltd. and the supplementary information provided thereafter, prepare gross value added statement of the company for the year ended 31st March, 2007. Also prepare another statement showing reconciliation of gross value added with profit before taxation.

Profit and loss account of Zed Ltd. for the year ended 31st March, 2007

	Amount in lakhs	Amount in lakhs
Sales		5,010
Other income		130
		5,140
Expenditure		
Production and operational expenses	3,550	
Administrative expenses	185	
Interest	235	
Depreciation	370	4,340
Profit before taxation		800
Provision for taxation		280
Profit after taxation		520
Credit balance as per last balance sheet		40
		560
Appropriation:		

Transfer to general reserve		100
Preference dividend (interim) paid		50
Proposed preference dividend (final)		50
Proposed equity dividend		300
Balance carried to balance sheet		60
		560

Supplementary information:

Production and operational expenses consist of:

Raw materials and stores consumed	1,900
Wages, salaries and bonus	610
Local taxes including cess	220
Other manufacturing expenses	820
	3,550

Administrative expenses consist of:

Salaries and commission to directors	60
Audit fees	24
Provision for bad and doubtful debts	20
Other administrative expenses	81
	185

Interest is on:

Loan from bank for working capital	35
Debentures	200
	235

[RTP – Nov. 07]

Solution:

Value Added Statement

Sales			5,010
Cost of bought in material and services			
Prod. And operational exp. (3,550 – 610 – 220)		2,720	
Adm. Expenses (185 – 220)		125	
Interest on we loan		35	<u>2,880</u>
VA by Trading activities			2,130
Add: other income			<u>130</u>
	GVA		<u>2,260</u>
Application Statement:			
Towards employees		610	26.99 %
Towards directors		60	2.65 %
Towards govt. (220 + 280)		500	22.12 %
Towards LTF Providers		200	8.85 %
Towards share holders			
Preference Dividend	100		
Equity Dividend	300	400	17.70 %
Towards entity:			
Depreciation	370		
Transfer to general reserve	100		
Retained profits (60 - 40)	20	490	21.68 %

Statement showing reconciliation between gross value added with PBT

Gross value added		2,260
Less: Wages, salaries	610	

Salaries and commission to directors	60	
Local taxes	220	
Interest on debenture	200	
Depreciation	370	1,460
Profit before tax		800

Q.5 Alpha Co. provides you with the following information:

Equity	₹100 lakhs
8 % secured loans	₹20 lakhs
10 % unsecured loans	₹30 lakhs
Profit after tax	₹15,83,000
Rate of tax	40 %
Normal bank rate / Cost of equity	12 %

You are required to calculate EVA for Alpha Co.

[RTP – Nov. 06]

Q.6 The following information is available of a concern; calculate EVA:

Debt capital 12 %	₹2,000 crores
Equity capital	₹500 crores
Reserve and surplus	₹7,500 crores
Capital employed	₹10,000 crores
Risk – free rate	9 %
Beta factor	1.05
Market rate of return	19 %
Equity (market) risk premium	10 %
Operating profit after tax	₹2,100 crores
Tax rate	30 %

[RTP – Nov. 07/ CA – Nov. 2006]

Q.7 Calculate EVA from the following data for the year ended 31st March, 2008

	₹ in lakhs
Average debts	50
Average equity	2,766
Cost of debt (post tax)	7.72 %
Cost of equity	16.7 %
Weighted average cost of capital	16.54 %
Profit after tax, before exceptional item	1541
Interest after tax	5

[RTP – Nov. 08]

Q.8 Form the following profit and loss account of B Ltd., prepare a gross value added statement for the year ended 31.12.98. Show also the reconciliation between gross value added and profit before taxation.

Profit and loss account for the year ended 31.12.98

	Notes	Rs. ('000)	Rs. ('000)
Income:			
Sales			6,240
Other income			55
			6,295
Expenditure:			
Production and operational expenses	1	4,320	
Administration expenses	2	180	
Interest and other charges	3	624	

Depreciation	16	5,140
Profit before tax		1,155
Provision for tax		55
		1,100
Balance as per last balance sheet		60
		1,160
Transferred to fixed assets replacement reserve	400	
Dividend paid	160	560
Surplus carried to balance sheet		600

Notes:

(i) Production and operational expenses:

Consumption of raw material	3,210
Consumption of stores	40
Local tax	8
Salaries to administrative staff	620
Other manufacturing expenses	442

(ii) Administration expenses include salaries and commission to directors

5

(iii) Interest and other charges include:

Interest on bank overdraft (overdraft is of temporary nature)	109
Fixed loan from I.C.I.C.I	51
Working capital loan from I.F.C.I	20
Excise duties amount to one – tenth of total value added by manufacturing and trading activities	

[CA – May, 1999]

Q.9 From the following profit and loss account of X Ltd. , prepare gross value added statement and show the reconciliation between gross value added and profit before taxation:

	₹ in lakhs	₹ in lakhs
Income:		
Sales		800
Other income		50
		850
Expenditure:		
Production and operational expenses	600	
Administrative expenses	30	
Interest and other charges	30	
Depreciation	20	680
Profit before tax		170
Provision for taxation		30
		140
Balance as per last balance sheet		10
		150
Transferred to:		
General reserve		80
Proposed dividend		20
Surplus carried to balance sheet		50
		150

Break up of some of the expenditure is as follows:

(i) production and operational expenses:

Consumption of raw material and stores	320
Salaries, wages and bonus	60

Cess and local taxes	20
Other manufacturing expenses	200
	600

(ii) Administrative expenses:

Audit fees	6
Salaries and commission to directors	8
Provision for doubtful debts	6
Other expenses	10
	30

(iii) Interest and other charges:

On working capital loans from bank	10
On fixed loans from ICICI	15
On Debentures	5
	30

[CA - May, 2002]

Q.10 On the basis of the following income statement pertaining to Brite Ltd., you are required to prepare:

(i) Gross value added statement and

(ii) Statement showing reconciliation of gross value added with profit before taxation.

Profit and loss account of Brite Ltd. for the year ended 31st March, 2003

	₹ in thousand	₹ in thousand
Income:		
Sales less returns		15,27,956
Dividends and interest		130
Miscellaneous income		474
Total (A)		15,28,560
Expenditure:		
Production and operational expenses:		
Decrease in inventory of finished goods	26,054	
Consumption of raw material	7,40,821	
Power and lighting	1,20,030	
Wages, salaries and bonus	3,81,760	
Staff welfare expenses	26,240	
Excise duty	14,540	
Other manufacturing expenses	32,565	13,42,010
Administrative expenses:		
Director's remuneration	7,810	
Other administrative expenses	32,640	40,450
Interest on:		
9 % mortgage debentures	14,400	
Long term loan from financial institution	10,000	
Bank overdraft	100	24,500
Depreciation		50,600
Total (B)		14,57,560
Profit before taxation (A - B)		71,000
Provision for income tax @ 35.875 %		25,470
Profit after taxation		45,530
Balance of account as per last Balance – sheet		6,300
		51,830
Transferred to:		
General reserve @ 40 % of ₹45,530	18,212	

Proposed dividend @ 22 %	22,000	
Tax on distributed profits @ 12.81 %	2,818	43,030
Balance of account as per last balance sheet		8,800

[CA – Nov. 2003]

Solution:

Value added statement

Particulars	Amount	Amount in thousand
Sales		15,27,956
Total		15,27,956
Less: cost of bought in material and services		
Production and operational expenses (13,42,010 – 3,81,760 – 26,240)	9,34,010	
Administration expenses (40,450 – 7,810)	32,640	
Interest (24,500 – 14,400 – 10,000)	100	9,66,750
Value added by trading and manufacturing activities		5,61,206
Add: Other income		
Dividend and interest	130	
Miscellaneous income	474	604
Gross value added		5,61,810

Application statement of gross value added:

Application		Amount	%
Towards employees			
Wages, salaries and bonus	3,81,760		
Staff welfare	26,240	4,08,000	72.62 %
Towards directors			
Director's remuneration		7,810	1.39 %
Towards providers of long term finance			
9 % debentures	14,400		
Long term loan	10,000	24,400	4.34 %
Towards shareholders: Dividend		22,000	3.92 %
Towards government			
Provision for taxation	25,470		
CDT	2,818	28,288	5.02 %
Towards entity			
Depreciation	50,600		
General reserve	18,212		
Retained earnings (8,800 – 6,300)	2,500	71,312	12.7 %
		5,61,810	

Q.11 Prepare a value added statement for the year ended on 31.3.2008 and reconciliation total value added with profit before taxation, from the profit and loss account of Yati Ltd. for the year ended on 31.3.2008:

		₹ in '000
Income:		
Sales		24,400
Other income		508
		24,908
Expenditure:		
Operating cost	21,250	
Excise duty	1,110	
Interest on bank overdraft	75	
Interest on 9 % debentures	1,200	23,635

Profit before depreciation		1,273
Depreciation		405
Profit before tax		868
Provision for taxation		320
Profit after taxation		548
Proposed dividend		48
Retained profit		500

The following additional information are given:

- (i) Sales represent Net sales after adjusting discounts, returns and sales tax.
- (ii) Operating cost includes ₹82,50,000 as wages, salaries and other benefits to employees.
- (iii) Bank overdraft is temporary.

[CA – Nov. 2008]

Solution:

**Value Added Statement
For the year ended 31.03.2008**

(Rs. In '000)

Sales			24,400
			24,400
Cost of bought in material / Service			
Operating cost (21,250 – 8,250)	13,000		
Interest on Bank overdraft	75		
Excise duty	1,110		14,185
Total B			14,185
VA By trading / Manufacturing cost (A – B)			10,215
Indirect Income			508
GVA			10,723
Applied:		%	
Employees	8,250	76.90	
Provider of finance	1,200	11.20	
Taxes	320	2.98	
Shareholders	48	0.45	
Entity			
R Earnings	500	8.47	
Depreciation	405		
	10,723	100	

Reconciliation Statement:

GVA		10,723
(-) Employees Cost	8,250	
(-) Provider of finance	1,200	
(-) Depreciation	405	9,855
PBT		868

Q.12 The following is the profit and loss account of Galaxy Ltd. for the year ended 31.3.2004. Prepare a gross value added statement of Galaxy Ltd. and show also the reconciliation between gross value added and profit before taxation.

Profit and loss account for the year ended 31.3.2004

	Notes	₹ in lakhs	₹ in lakhs
Income:			
Sales			890
Other income			55

			945
Expenditure:			
Production and operational expenses	(a)	641	
Administration expenses (factory)	(b)	33	
Interest	(c)	29	
Depreciation		17	720
Profit before taxation			225
Provision for taxation	(d)		30
Profit after tax			195
Balance as per last balance sheet			10
			205
Transferred to general reserve		45	
Dividend paid		95	140
Surplus carried to balance sheet			65
			205

Notes:

(a) Production and operational expenses:

Consumption of raw material	293
Consumption of stores	59
Salaries, wages, gratuity etc.	82
Cess and local taxes	98
Other manufacturing expenses	109
	641

(b) Administration expenses include salaries, commission to directors ₹9.00 lakhs. Provision for doubtful debts ₹6.30 lakhs.

(c) Interest on loan from ICICI bank for working capital

9

Interest on loan from ICICI bank for fixed loan

10

Interest on loan from IFCI for fixed loan

8

Interest on debentures

2

(d) The charges for taxation include a transfer of ₹3.00 lakhs to the credit of Deferred tax account.

(e) Cess and local taxes include excise duty, which is equal to 10 % of cost of bought in material.

[CA – Nov. 2004]

Solution:

Value Added Statement

Sales			890
Total (A)			890
Cost of bought in material and service			
Production & operational exp. (641 - 82 - 98)		461	
Excise duty		54.89	
Adm. Expenses (33 - 9)		24	
Interest (29 - 10 - 8 - 2)		9	
Total (B)			548.89
VA By trading activities (A-B)			341.11
+ Indirect income			55.00
GVA			396.11
Application statement:			
Employees		82	
Directors		9	
Providers of finance		20	
Government taxes (98 - 54.89) = 43.11	43.11		
Provision for tax (30 - 3)	27.00	70.11	

Entity			
Dep.	17		
R Earnings (65 – 10)	55		
GR	45		
D. Tax	<u>3</u>	120	
Shareholders		<u>95</u>	
		396.11	
Reconciliation statement:			
GVA			396.11
(-) Employees			82
(-) Directors			9
(-) Finance			20
(-) Cess & local tax			43.11
(-) Dep.			<u>17</u>
		PBT	<u>225</u>

Calculation of excise duty:

Prod. Exp. + Excise + Adm. Exp. + Interest = BIMS

$$461 + .10x + 24 + 9 = x$$

$$494 = x - .10x$$

$$494 = .90x$$

$$X = 548.89$$

$$\text{Excise duty} = 548.89 \times 10 \% = 54.89$$

Q.13 Value added Ltd. furnishes the following profit and loss account:

Profit and loss account for the year ended 31st March, 2007

	Notes	₹ ('000)
Income:		
Turnover	1	29,874
Other income		1,040₹
		30,914
Expenditure:		
Operating expenses	2	26,741
Interest on 8 % debentures		987
Interest on cash credit	3	151
Excise duty		1,952
		29,831
Profit before depreciation		1,083
Less: Depreciation		342
Profit before tax		741
Provision for tax		376
Profit after tax		365
Less: transfer to fixed assets replacement reserve		65
		300
Less: Dividend paid		125
Retained profit		175

Notes:

(i) Turnover is based on invoice value and net of sales tax.

(ii) Salaries, wages and other employee benefits amounting to ₹14,761('000) are included in operating expenses.

(iii) Cash credit represents a temporary source of finance. It has not been considered as a part of capital.

(iv) Transfer of ₹54 ('000) to the credit of deferred tax account is included in provision for tax.

Prepare value added statement for the year ended 31st March, 2007 and reconcile total value added with profit before taxation.
[CA – Nov. 2007]

Q.15 From the following profit and loss account of New Mode reporting Ltd., prepare a gross value added statement for the year ended 31st December, 2007. Show also the reconciliation between GVA and profit before taxation:

Profit and loss account

	₹ '000	₹ '000
Income:		
Sales	12,480	
Other income	110	12,590
Expenditure:		
Production and operational expenditure	8,640	
Administrative expenses	360	
Interest and other charges	1,248	
Depreciation	32	10,280
Profit before tax		2,310
Less: Provision for tax		110
Profit after tax		2,200
Add: balance as per last balance sheet		120
		2,320
Less: transfer to fixed assets replacement reserve	800	
Dividend paid	320	1,120
Surplus carried to balance sheet		1,200

Additional information:

(i) Production and operational expenses consists of:

Consumption of raw materials	6,42,000
Consumption of stores	80,000
Local tax	16,000
Salaries to administrative staff	12,40,000
Other manufacturing expenses	8,84,000

(ii) Administrative expenses include salaries and commission to directors – ₹10,000.

(iii) Interest and other charges includes:

Interest on bank overdraft (overdraft is of temporary nature)	2,18,000
Fixed loan from SIDBI	1,02,000
Working capital loan from IFCI	40,000
Excise duties amount to one – tenth of total value added by manufacturing and trading activities.	

[CA – Nov. 08]

Q.16 Yati corporation had been preparing value added statements for the past five years. The personnel manager of the company has suggested that a value added incentive scheme when introduced will motivate employees to better performance. To introduce the scheme, it is proposed that the best index performance, i.e. employee costs to added value for the last 5 years will be used as the target index for future calculations of the bonus to be earned. After the target index is determined, any actual improvement in the index will be rewarded, the employer and employees sharing any such bonus in the ratio of 1:2. The bonus is given at the end of the year, after the profit for the year is determined. From the following details, find out the bonus to be paid to the employees, if any for 2002:

Value added statement for 5 years

Year	1997 (‘000)	1998 (‘000)	1999 (‘000)	2000 (‘000)	2001 (‘000)
Sales	2,800	3,800	4,600	5,200	6,000
Less: Bought in goods and services	1,280	2,000	2,500	2,800	3,200
Value added	1,520	1,800	2,100	2,400	2,800
Application of value added:					
Employee cost	650	760	840	984	1,120
Dividend	100	150	200	240	300
Taxes	320	380	420	500	560
Depreciation	260	310	360	440	560
Debenture interest	40	40	40	40	40
Retained earnings	150	160	240	196	220
Total application of VA	1,520	1,800	2,100	2,400	2,800

Profit and loss account for 2002

	Rs. in ‘000	Rs. in ‘000
Sales		7,300
Cost of material	2,500	
Wages	700	
Production salaries	200	
Production expenses	700	
Depreciation of machinery	500	
Administration salaries	300	
Administration expenses	300	
Administration depreciation	200	
Debenture interest	40	
Salaries (sales department)	60	
Sales expenses	200	
Depreciation (sales department assets)	60	5,760
Profit		1,540

[CWA – F, 1987]

Solution:**Calculation of target index**

$$1997 = \frac{650}{1,520} \times 100 = 42.76 \%$$

$$1998 = \frac{760}{1,800} \times 100 = 42.22 \%$$

$$1999 = \frac{840}{2,100} \times 100 = 40 \%$$

$$2000 = \frac{984}{2,400} \times 100 = 41 \%$$

$$2001 = \frac{1,120}{2,800} \times 100 = 40 \%$$

Target index would be lower of above i.e. 40 %

Value added:		
Sales		7,300
(-) Material Cost	2,500	
(-) Production expenses	700	
(-) Administration expenses	300	
(-) Sales expenses	200	3,700
GVA		3,600

$$\text{Payroll VA Ratio} = \frac{700+200+300+60}{3,600} \times 100 = \frac{1,260}{3,600} \times 100 = 35 \%$$

$$\text{Bonus} = (40 \% - 35 \%) \times 3,600 = 180$$

$$\text{Employee's sh.} = 180 \times \frac{2}{3} = 120$$

Q.17 Equity share capital

₹10,00,000

Reserve and surplus

₹3,00,000

12 % Preference share capital

₹2,00,000

10 % Debentures

₹4,00,000

Immovable property (held as investment)

₹1,00,000

Profit after tax

₹ 2,00,000

Rate of tax

40 %

Companies with beta factor of 1 in similar business have market rate of return 15 %. Beta factor of X Ltd. is

1.1. Calculate EVA assuming risk free return – 7 %.

Solution:

Calculation of operating capital:

Equity share capital	10,00,000
Reserve & surplus	3,00,000
Preference share capital	2,00,000
10 % Deb.	4,00,000
Total capital	19,00,000
(-) Non – operating Assets	1,00,000
Opening Capital	18,00,000

Calculation of ROOC:

$$\text{ROOC} = \frac{\text{NOPAT}}{\text{OC}} \times 100 = \frac{2,24,000}{18,00,000} \times 100 = 12.44 \%$$

NOPAT:

PAT	2,00,000
+ Tax	1,33,333
PBT	3,33,333
+ Interest Expenses (4, 00,000 × 10 %)	40,000
EBIT	3,73,333
(-) Non - operating income	Nil
OP EBIT	3,73,333
(-) Economic tax @ 40 %	1,49,333
NOPAT	2,24,000

Calculation of WACC:

$$K_e = \frac{10(1 - .40)/4,00,000}{19,00,000} = 1.263$$

$$K_p = \frac{12\% \times 2,00,000}{19,00,000} = 1.263$$

$$K_e = 7\% + 1.1(15-7) = \frac{15.80/13,00,000}{19,00,000} = \frac{10.81}{13.336}$$

$$EVA = (12.44 - 13.336) 18,00,000$$

(16,128)

Q.18 Following is the profit and loss account and balance sheet for M/s Yati Ltd.

	2003	2004
Turnover	652	760
Pre – tax accounting profit	134	168
Taxation	46	58
Profit after tax	88	110
Dividends	30	36
Retained earnings	58	74

Balance sheet extracts are as follows:

	2003	2004
Fixed assets	240	312
Net current assets	260	320
Total	500	632
Equity shareholders fund	390	472
Medium and long term bank loan	110	160

The companies performance in regard to turnover has increased by 17 % along with increase in pre – tax profit by 25 % but shareholders are not satisfied by the company's performance in the last two years. You are required to calculate economic value added as suggested by M/s stern Stewert & Co. USA. You are also given:

	2003	2004
Pre – tax cost of debt	9 %	10 %
Cost of equity	15 %	17 %
Tax rate	35 %	35 %
Interest expenses	8	12

All figures are in ₹crores.

Solution:

Calculation of operating capital:

(₹ in crores)

	2003	2004
Equity share holders fund	390	472
Medium & LTL	110	160
O.C.	500	632

Calculation of ROOC:

	2003	2004
PBT	134	168
+ Interest	8	12
Opening EBIT	142	180
(-) Tax @ 35%	49.70	63
	92.30	117
$ROOC = \frac{NOPAT}{OC} \times 100$	$\frac{92.30}{500} \times 100$	$\frac{117}{632} \times 100$
	18.46%	18.51%

Calculation of WACC:

s	2003	2004
---	------	------

k_d	$\frac{9\%(1-.35)110}{500} = 1.287$	$\frac{10\%(1-.35)160}{632} = 1.646$
k_e	$\frac{15\% \times 390}{500} = 11.7$	$\frac{17\% \times 472}{632} = 12.7$
	<u>12.987</u>	<u>14.346</u>

	2003	2004
EVA	(ROOC – WACC)OC	(ROOC – WACC)OC
	(18.46 - 12.987)500	(18.51 - 14.346)632
	<u>27.365</u>	<u>26.316</u>

Q.19 From the following information concerning Nebula Ltd., prepare a statement showing computation of EVA for the year ended 31st March, 2004:

Profit and loss account for the year ended 31st March, 2004

	Amount
Sales	20,00,000
Cost of goods sold	12,00,000
Gross profit	8,00,000
Expenses:	
General	2,00,000
Office and administration	2,50,000
Selling and distribution	64,000
Profit before interest and tax	2,86,000
Interest	36,000
Profit before tax (PBT)	2,50,000
Tax @ 40 %	1,00,000
Profit after tax	1,50,000

Summarized balance sheet as on 31st March, 2004

Liabilities	Amount	Assets	Amount
Equity shares	2,40,000	Fixed assets (Net)	6,00,000
Reserves	1,60,000	Stock	1,20,000
Term loan	2,40,000	Debtors	60,000
Current liabilities	1,60,000	Bank	20,000
	8,00,000		8,00,000

Other particulars:

- Cost of goods includes depreciation expenses of Rs. 60,000.
- The expectation return of shareholders is 12 %.

Q.20 Prime commercial bank has a criterion that it will give loan to companies that have an economic value added greater than zero for the past three years on average. The bank is considering lending money to a small company that has the economic value characteristics shown below. Does that company meet the bank's criterion for a positive economic value added? The data relating to the company is as follows:

- Average operating income after tax equals ₹25,00,000 per year for the last three years.
- The average total assets of company over the past three years equals ₹75,00,000.
- The weighted average cost of capital appropriate for the company equals 10 % which is applicable to all three years.
- The company's average current liabilities over the past three year equals ₹15,00,000.

[RTP – Nov. 2010]

Solution:

NOPAT = 25,00,000

Operating capital: 75,00,000 – 15,00,000 = 60,00,000

$$\begin{aligned} \text{ROOC} &= \frac{\text{NOPAT}}{\text{Operating capital}} \times 100 \\ &= \frac{25,00,000}{60,00,000} \times 100 = 41.667\% \end{aligned}$$

$$\text{WACC} = 10\%$$

$$\begin{aligned} \text{EVA} &= (\text{ROOC} - \text{WACC}) \text{OC} \\ &= (41.667\% - 10\%) 60,00,000 \\ &= 19,00,000 \text{ (Approx.)} \end{aligned}$$

Q.21 From the following data compute the EVA:

Share capital	₹1,600 crores
Long – term debt	₹320 crores
Interest	₹32 crores
Reserve and surplus	₹3,200 crores
Profit before interest and tax	₹1,432 crores
Tax rate	30 %
Cost of equity	14.2 %

Solution:

Calculation of NOPAT:

EBIT	1,432
Less: Tax @ 30 %	572.80
NOPAT	859.20

Calculation of WACC:

$$\begin{aligned} K_d &= \frac{\text{Interest} (1-T)}{\text{Long term debt}} \times 100 \\ &= \frac{32 (1-0.40)}{320} \times 100 = \frac{19.20}{320} \times 100 \\ &= 6.00\% \end{aligned}$$

$$K_e = 14.20\%$$

Statement of WACC:

Source	Amount	Weight	Cost of s	

Q.22 S.V. Ltd. have announced bonus for staff @ 50 % of any value added earned in excess of ₹1.15 per Re.1 of labour. S.V. Ltd.'s results for the year ended 30th September, 2003 are as follows: (in thousands)

Sales			5,000
Cost of sales			
Cost of production:			
Materials	1,000		
Direct labour	1,200		
Factory overhead (Note 1)	1,500	3,700	
Work – in – progress:			
Opening	140		
Closing	160	(20)	
Finished goods:			
Opening	400		
Closing	440	(40)	3,640

Gross profit		1,360
Selling and administration overheads (Note 1)		870
Profit		490
Royalties received		10
Net profit		500
Taxation		200
Net profit after tax		300
Dividends		100
Profit		200

Note: 1

	Factory	Selling and administration
Wages and salaries	400	470
Equipment leasing	50	10
Depreciation	200	50
Others rent, rates etc.	850	340

S.V. Ltd. is having beta factor of 1.1 and has following capital structure:

Equity shareholder funds 700

9 % preference share capital 200

Rate of tax is 40 % risk free return is 4 %

Market rate of return is 16 %

Company is planning to introduce EVA based bonus which will be 10 % of EVA. Such bonus will be shared by employees in ratio of their emoluments. Find the amount of bonus receivable by an employee, whose annual wage bill of ₹5,000 under both plans of VA and EVA.

Solution:

Value Added Statement		(in' 000)
Sales		5,000
+ Royalty		10
		5,010
Cost of bought in mat & service		
Material	1,000	
Fact. Overheads (1,500 – 400 – 200)	900	
WIP Inc.	(20)	
FG Inc.	(40)	
Selling & Adm. overhead (870 – 470 – 50)	350	2,190
VA By trading & Manu. Activity / GVA		2,820
Bonus:		
Direct labour	1,200	
Wages & salaries (400 + 470)	870	
	2,070	

Bonus = 50% (VA – 1.15 of Labour)

= 50% (2,820 – 1.15 × 2,070)

= 220 or 219.75

Bonus for employee having Salary of ₹5,000 = $\frac{220}{2,070} \times 5 = .531$ thousand

i.e. ₹531

Calculation of EVA:

(a) Calculation of OP. Capital	
Equity share holders funds	700
Preference share capital	200

	900
(b) Calculation of ROOC:	
PBT	500
+ Interest	-
EBIT	500
(-) Non - trade income	-
OP. EBIT	500
(-) Economic taxes @ 40%	200
NOPAT	300

$$\text{ROOC} = \frac{300}{900} \times 100 = 33.33\%$$

WACC:

$$K_p = 9\% \times \frac{200}{900} = 2$$

$$K_e = 4\% + 1.10(6 - 4)$$

$$= 4 + 2.2 = 6.20$$

$$= 6.20 \times \frac{700}{900} = 4.82$$

$$\text{WACC} = 6.82\%$$

$$\text{EVA} = (33.33 - 6.82)900 = 238.60$$

$$\text{Bonus} = 10\% \text{ of EVA} = 23.86$$

$$\text{Bonus of employees having 5,000 salary} = \frac{23.86}{2,070} \times 5 = .057 \text{ i.e. ₹57}$$

Q. 23 H.L. & Co. provides you with the following as at 31st March, 2003:

Liabilities	Amount (₹ in lakhs)	Assets	Amount (₹ in lakhs)
Share capital	981.46	Fixed assets (Net)	2,409.90
Reserve and surplus	1,313.62	Current assets	50.00
Long term debt	144.44		
Sundry creditors	20.38		
	2,459.90		2,459.90

Additional information provided is as follows:

(i) Profit before interest and tax is ₹ 2,202.84 lakhs.

(ii) Interest paid is ₹ 13.48 lakhs.

(iii) Tax rate is 40 %.

(iv) Risk free rate of return = 11.32 %.

(v) Long term market rate = 12 %.

(vi) Beta (β) = 1.62

You are required to calculate Economic value added of H.L & Co.

Solution:

Calculation of NOPAT:

EBIT	2,202.84
Less: Tax @ 40 %	881.14
NOPAT	1,321.70

Calculation of operating capital:

Share capital	981.46
Reserves and surplus	1,313.62
Long term debt	144.44
Operating capital	2,439.52

$$\text{Calculation of ROOC} = \frac{\text{NOPAT}}{\text{Operating capital}} \times 100$$

$$= \frac{1321.70}{2,439.52} \times 100 = 54.14 \%$$

Calculation of WACC:

$$K_d = \frac{\text{Interest} (1-T)}{\text{Long term debt}} \times 100$$

$$= \frac{13.48 (1-0.40)}{144.44} \times 100 = \frac{8.088}{144.44} \times 100$$

$$= 5.60 \%$$

$$K_e = R_f + \beta (R_m - R_f)$$

$$= 11.32 + 1.62 (12 - 11.32)$$

$$= 11.32 + 1.10 = 12.42 \%$$

Statement of WACC:

Source	Amount	Weight	Cost of capital	WACC
Equity fund:				
Share capital	981.46			
Reserves	1,313.62			
	2,295.08	0.941	12.42	11.69
Debt	144.44	0.059	5.60	0.33
				12.02

$$\text{EVA} = (\text{ROOC} - \text{WACC}) \text{OC}$$

$$= (54.14 \% - 12.02 \%) 2,439.52$$

$$= 2,439.52 \times 42.12 \%$$

$$= 1,027.53$$

Q. 24 The Capital structure of W Limited whose shares are quoted on the NSE is as under:

Equity share capital of ₹100 each fully paid	₹505 lakhs
9 % Convertible preference shares of ₹10 each	₹150 lakhs
12 % Secured debentures of ₹10 each	5,00,000
Reserves	₹101 lakhs
Statutory fund	₹50,50,000

The statutory fund is compulsorily required to be invested in Government securities. The ordinary shares are quoted at a premium of 500 %. Preference shares at ₹30 per share and debentures at par value. You are required to calculate the Market value added of the company and also give your assessment on the market value added as calculated by you.

[CA – May, 2014 (Accounts)]

Q.25 Gold Limited has provided the following data for the financial year ending 2014:

Liabilities	₹ in lakhs	Assets	₹ in lakhs
Share capital	1,000	Fixed assets	3,000
Reserves and surplus	2,000	Investments	150
Long term debts	200	Current assets	100
Trade payables	50		
	3,250		3,250

Additional information provided is as follows:

Profit before interest and tax	₹1,000 lakhs
Interest	₹20 lakhs
Tax rate	35.875 %
Risk free rate	10 %
Market rate	15 %
Beta factor	1.40

Calculate Economic value added by Gold Limited.

[CA – May, 2014 (Accounts)]

Q.26 RST Ltd's current financial year's income statement reported its net income as ₹25,00,000. The applicable corporate tax rate is 30 %. Following is the capital structure of RST Limited at the end of current financial year:

Debt (Coupon rate = 11 %)	₹40 lakhs
Equity (Share capital + Reserves and surplus)	₹125 lakhs
Invested capital	₹165 lakhs

Following data is given to estimate cost of equity capital:

Beta of RST Limited	1.36
Risk – free rate i.e. current yield on government bond	8.5 %
Average market risk premium i.e. excess of return on market portfolio over risk free rate	9 %

Required:

(i) Estimate weighted average cost of capital (WACC) of RST Limited.

(ii) Estimate Economic value added (EVA) of RST Ltd.

[CA – May, 2014 (SFM)]

Q.27 The value added statements of Value Limited for the last 5 years are furnished below: (₹ in lakhs)

	2007 – 08	2008 – 09	2009 – 10	2010 – 11	2011 – 12
Sales	6,000	8,000	10,000	12,000	14,000
Cost of bought in material, services and expenses	2,960	4,400	5,800	7,200	8,400
Value added	3,040	3,600	4,200	4,800	5,600
Applied towards:					
Employee costs	1,368	1,584	1,680	1,968	2,240
Directors remuneration	30	44	40	48	50
Government taxes	640	760	840	1,000	1,120
Providers of capital	250	336	440	512	630
Maintenance and expansion	752	876	1,200	1,272	1,560
Total	3,040	3,600	4,200	4,800	5,600

The Employee Costs included Annual Incentive that were decided and paid after negotiations with Labour Unions as under:

100 108 118 130 150

From 2012-13 onwards it was agreed to introduce a Value Added Incentive Scheme (VAIS) that would enable employees to have the opportunity to earn better incentives in case of enhanced performances. The salient features of VAIS are as under:

- The highest Contribution of the last 5 years shall be the Target Index.
- 50% of the excess of actual contribution in 2012-13 over target shall be paid to employees as incentive.
- CONTRIBUTION shall mean the Value Added for the year reduced by Employee costs before incentive and expressed as a percentage of Turnover for the year. The result so obtained is to be rounded off to the nearest whole number.

The Profit & Loss account Summary for 2012-13 is given below from which you are required to:

(I) Calculate the amount of Incentive payable to the employees

(II) Prepare Statement of Application of Value Added for the year 2012-13 after payment of the incentive.

Summarized Profit & Loss account of Value Ltd. for the year ended 31.03.2013

		(₹ in lakhs)
Sales		17,250
Less:		
Material and services consumed	6,400	
Wages	1,200	
Production salaries	400	
Production expenditure	1,600	
Depreciation on machinery	1,000	

Administrative salaries	600	
Administrative expenses	700	
Directors remuneration	60	
Administration depreciation	350	
Interest on debentures	80	
Advertisement and sales promotion	600	
Salaries to sales team	125	
Selling expenses	150	
Sales department depreciation	120	13,385
Profit before taxes		3,865
Taxes	1,190	
Proposed dividend	800	1,990
Balance carried over		1,875

[CA – Nov. 2013 (Accounts)]

Q.28 With the help of the following information of Jatayu Limited compute the Economic Value Added:

Capital Structure

Equity capital ₹ 160 Lakhs
Reserves and Surplus ₹ 140 lakhs
10% Debentures ₹ 400 lakhs

Cost of equity

14%

Financial Leverage

1.5 times

Income Tax Rate

30%

[CA – Nov. 2012(SFM)]

Q.29 Hindusthan Corporation Limited (HCL) has been consistently preparing Value Added Statement (VAS) as part of Financial Reporting. The Human Resource department of the Company has come up with a new scheme to link employee incentive with 'Value Added' as per VAS. As per the scheme an Annual Index of Employee cost to Value Added annually (% of employee cost to Value Added rounded off to nearest whole number) shall be prepared for the last 5 years and the best index out of results of the last 5 years shall be selected as the 'Target Index'. The Target Index percentage shall be applied to the figure of 'Value Added' for a given year to ascertain the target employee cost. Any saving in the actual employee cost for the given year compared to the target employee cost will be rewarded as 'Variable incentive' to the extent of 70% of the savings. From the given data, you are requested to ascertain the eligibility of 'Variable Incentive' for the year 2011-2012 for the employees of the HCL. Value added statement of HCL for last 5 years (₹ lakhs)

Year	2006 – 07	2007 – 08	2008 – 09	2009 – 10	2010 – 11
Sales	3,200	3,250	2,900	3,800	4,900
Less: Bought out goods and services	2,100	2,080	1,940	2,510	3,200
Value added	1,100	1,170	960	1,290	1,700

Application of value added:

Year	2006 – 07	2007 – 08	2008 – 09	2009 – 10	2010 – 11
To pay employees	520	480	450	600	750
To providers of capital	160	170	120	190	210
To Government tax	210	190	220	300	250
For maintenance and expansion	210	330	170	200	490

Summarized Profit and Loss Account of the HCL for 2011-2012 (₹ in lakhs)

Sales		5,970
Less:		
Material consumed	1,950	
Wages	400	
Production salaries	130	
Production expenses	500	

Production depreciation	150	
Administrative salaries	150	
Administrative expenses	200	
Administrative depreciation	100	
Interest	150	
Selling and distribution salaries	120	
Selling expenses	350	
Selling depreciation	120	4,320
Profit		1,650

[CA – May, 2012]

Q.30 The following information (as of 31-03-2012) is supplied to you by M/s Fox Ltd.:

		(₹ in crores)
Profit after tax (PAT)		205.90
Interest		4.85
Equity share capital	40.00	
Accumulated surplus	700.00	
Shareholders fund	740.00	
Loans (Long terms)	37.00	
Total long term funds		777.00
Market capitalization		2,892.00
Risk free rate		12.00 %
Long term market rate (Based on BSE Sensex)		15.50 %
Effective tax rate for the company		25.00 %
Beta for last few years:		
Year 1	0.48	
Year 2	0.52	
Year 3	0.60	
Year 4	1.10	
Year 5	0.99	

Using the above data you are requested to calculate the Economic Value Added of Fox Ltd. as on 31st March, 2012.

[CA – May, 2012]

Q.31 Prepare a value added statement for the year ended on 31.03.2011 and reconciliation of total value added with profit before taxation, from the profit and loss account of Paradise Ltd. for the year ended on 31-03-2011.

	₹ in lakhs
Income:	
Sales	254.00
Other income	6.00
Total	260.00
Expenditure:	
Operating cost	222.00
Excise duty	11.20
Interest on bank overdraft	1.00
Interest on 9 % debentures	15.00
	249.20
Profit before depreciation	10.80
Depreciation	4.10
Profit before tax	6.70
Provision for tax	2.40
Profit after tax	4.30

Proposed dividend	0.30
Retained profit	4.00

The following additional information are given:

- (i) Sales represent net sales after adjusting discounts, returns and sales tax.
 - (ii) Operating cost includes ₹ 82.00 lakhs as wages, salaries and other benefits to employees.
 - (iii) Bank overdraft is temporary.
- [CA – Nov. 2011]

Q.32 Life Industries Ltd (LIL) furnishes the following information from which you are required to calculate the prevailing Economic Value Added of the company and also explain the reason for the difference, if any, between the EVA as calculated by you and the MVA (Market Value Added) of LIL amounting to ₹ 14005 crores.

Common shares of ₹1,000 face value	1,58,200 units
12 % Debentures of ₹10 face value	50,00,000 units
Current tax rate	30 %
Financial leverage	1.10 times
Securities premium account (Rupees in lakhs)	155
Free reserves (Rupees in lakhs)	154
Capital reserve (Rupees in lakhs)	109

It is a prevailing practice for companies in the industry to which LIL belongs to pay at least a dividend of 15% p.a. to its common shareholders.

[CA – Nov. 2011]

Solution:

$$\text{Financial leverage} = \frac{EBIT}{EBT}$$

$$1.10 = \frac{EBIT}{EBIT - I}$$

$$1.10 = \frac{EBIT}{EBIT - 60,00,000}$$

$$1.10 \text{ EBIT} - 66,00,000 = \text{EBIT}$$

$$0.10 \text{ EBIT} = 66,00,000$$

$$\text{EBIT} = \frac{66,00,000}{0.10} = ₹6,60,00,000$$

Calculation of NOPAT:

EBIT	6,60,00,000
Less: Tax @ 30 %	1,98,00,000
NOPAT	4,62,00,000

Calculation of operating capital:

Equity share capital	15,82,00,000
Securities premium	1,55,00,000
Free reserves	1,54,00,000
Capital reserve	1,09,00,000
12 % Debentures	5,00,00,000
Operating capital	25,00,00,000

$$\begin{aligned} \text{ROOC} &= \frac{\text{NOPAT}}{\text{Operating capital}} \times 100 \\ &= \frac{4,62,00,000}{25,00,00,000} \times 100 = 18.48 \% \end{aligned}$$

$$\text{Calculation of } K_d = 12 (1 - 0.30) = 8.40 \%$$

Calculation of WACC:

Sources	Amount	Weight	Cost of capital	WACC
Equity fund:				
Equity Capital	15,82,00,000			
Securities premium	1,55,00,000			
Free reserves	1,54,00,000			
Capital reserve	1,09,00,000			
	20,00,00,000	0.80	15	12
12 % Debentures	5,00,00,000	0.20	8.40	1.68
				13.68

$$\begin{aligned}
 \text{EVA} &= (\text{ROOC} - \text{WACC}) \text{OC} \\
 &= (18.48\% - 13.68\%) 25,00,00,000 \\
 &= 25,00,00,000 * 4.80\% \\
 &= 1,20,00,000
 \end{aligned}$$

MVA of 14,005 crores:

The MVA of ₹14,005 crores is the difference between the current market value of LIL and book value of LIL (i.e. capital contributed by the fund providers). EVA measures current earning efficiency of the company while MVA considers future projections of the company. The difference between MVA and EVA thus represents the value attributable to the future potential of the company. In short the MVA is the net present value of all future's EVA's.

Q.33 Tender Ltd has earned a net profit of ₹ 15 lacs after tax at 30%. Interest cost charged by financial institutions was ₹ 10 lacs. The invested capital is ₹ 95 lacs of which 55% is debt. The company maintains a weighted average cost of capital of 13%. Required,

- Compute the operating income.
- Compute the Economic Value Added (EVA).
- Tender Ltd. has 6 lac equity shares outstanding. How much dividend can the company pay before the value of the entity starts declining?

[CA – May, 2011 (SFM)]

Q.34 DISA and Co. has provided the following information:

	₹ in lakhs
Equity share capital (₹10 each)	400
15 % Preference share capital (₹10 each)	200
Reserves and surplus	220
15 % Debentures	1,600
10 % non – trade investments (Nominal value ₹100 lakhs)	140
Land and building held as investment	20
Advance given for purchase of plant	10
Capital work in progress	30
Underwriting commission (not written off)	20
Earnings per share	16
Tax rate	30 %
Beta factor	1.65
Market rate of return	16.25 %
Risk free rate of return	9.85 %

Calculate Economic value added by the company.

[CA – Nov. 2014]

Q.35 Famous Corporation has been preparing Value Added Statements for the past five years. The Human Resource Manager of the company has suggested introducing a value added incentive scheme to motivate the

employees for their better performance. To introduce the scheme, it is proposed that the best index performance (favourable to employer) i.e. Employee Costs to Added Value for the last five years, will be used as the target index for future calculations of the bonus to be paid. After the target index is determined, any actual improvement in the index will be rewarded. The employer and the employee will be sharing any such improvement in the ratio of 1:2. The bonus is given at the end of the year, after the profit for the year is determined. The following information is available for the last 5 years.

Value added statement for 5 years

(₹ in thousand)					
Particulars	2010	2011	2012	2013	2014
Sales	5,600	7,600	9,200	10,400	12,000
Less: bought in goods, service	2,560	4,000	5,000	5,600	6,400
Added value	3,040	3,600	4,200	4,800	5,600
Employee costs	1,300	1,520	1,680	1,968	2,240
Dividend	200	300	400	480	600
Taxes	640	760	840	1,000	1,120
Depreciation	520	620	720	880	1,120
Debenture interest	80	80	80	80	80
Retained earnings	300	320	480	392	440
Added value	3,040	3,600	4,200	4,800	5,600

Summarised Profit and Loss Account for the year ended on 31st March, 2015.

(₹ in thousand)		
Particulars		
Income		
Sales less returns	13,600	
Dividend and interest	500	
Miscellaneous income	500	14,600
Expenditure:		
Production and operational expenses		
Cost of material	5,000	
Wages and salaries	1,800	
Other manufacturing expenses	1,400	8,200
Administrative expenses:		
Administrative expenses	600	
Administration expenses	600	1,200
Selling and distribution expenses:		
Selling and distribution salaries	120	
Selling expenses	400	520
Financial expenses:		
Debenture interest		80
Depreciation		1,520
Total expenditure		11,520
Profit before taxation		3,080
Provision for taxation		770
Profit after taxation		2,310

From the above information, prepare Value Added Statement for the year 2014 -15 and determine the amount of bonus payable to employees, if any.
[May, 2015]

Q.36 Vijay Limited furnishes the following information from which you are required to calculate the Economic value added (EVA) of the company and also explain the reason for the difference, if any, between the EVA as calculated by you and the MVA of Vijay Limited amounting to ₹7,010 crores.

Common shares of ₹10 face value	79,10,000 shares
10 % debentures of ₹100 face value	2,50,000 debentures
Tax rate	30 %
Finance leverage	1.10 times
Capital reserves (₹ in lakhs)	54
Free reserves (₹ in lakhs)	75
Securities premium (₹ in lakhs)	80

It is common practice for companies in the industry to which Vijay Limited belongs to pay at least a dividend of 12 % to its common shareholders.

[Nov. 2015]

Q.37 You are required to calculate the Economic value added by using the following information of Balak Limited:

Equity shares of ₹100 each	₹45,00,000
Reserves and surplus	₹35,00,000
10 % Debentures of ₹100 each	₹60,00,000
Dividend expectations of equity share holders	16 %
Prevailing corporate tax	30 %
Financial leverage	1.2 times

[CA – Nov. 2016]

Q.38 From the following value added statement prepare the statement of profit and loss of the Value Limited for the year ending 31.3.2016:

Sales		30,56,000
Less: Bought in cost for material and service:		
Decrease in stock	16,000	
Purchases	15,20,000	
Manufacturing and other expenses	75,000	
Electricity	56,500	
Interest on working capital loan	25,600	(16,93,100)
		13,62,900
Add: Other income		23,100
Gross value added		13,86,000
Gross value added applied:		
To Employees:		
Wages and salaries	4,35,000	
Director setting fees and remuneration	25,000	4,60,000
To Government:		
Cess and taxes	5,000	
Provision for income tax	35,000	40,000
To Capital providers:		
Finance charges	3,75,000	
Proposed dividend	1,00,000	4,75,000
Towards renewals and replacements:		
Depreciation	1,22,000	
Debenture redemption reserve	2,00,000	
General reserve	1,00,000	
Retained profits	(11,000)	4,11,000
Gross value added applied		13,86,000

(i) Closing stock as on Balance – sheet date was ₹40,000.

(ii) Profit and loss account at the beginning of the financial year was ₹1,25,000. [CA – Nov. 2016]

Q.39 From the following value added statement, prepare the statement of profit and loss account of the Rishab Limited for the year ending 31.3.2015:

	(₹ in 000)	(₹ in 000)
Sales		24,400
Less: Cost of bought in material and services		
Operating cost	13,000	
Excise duty	1,110	
Interest on bank overdraft	75	14,185
		10,215
Add: Other income		508
Gross value added		10,723
Gross value added applied:		
To Employees:		
Wages and salaries		8,250
To Government:		
Provision for taxation		320
To Capital providers:		
Debenture interest	1,200	
Proposed dividend	48	1,248
To Maintenance and expansion of company:		
Depreciation	405	
Retained profits	500	905
Gross value added applied		10,723

Q.40 From the following value added statement, prepare the statement of profit and loss of the Galaxy Limited for the year ending 31.3.2016:

	(₹ in lakhs)	(₹ in lakhs)
Sales		15,279
Less: Cost of bought in material and services		
Decrease in stock	261	
Consumption of raw material	7,408	
Power and light	1,200	
Excise duty	145	
Other manufacturing expenses	326	
Administrative expenses	326	
Interest on bank overdraft	1	9,667
Value added from trading activities		5,612
Add: Other income:		
Dividend income	1	
Misc. income	5	6
Gross value added		5,618
Gross value added applied:		
To Employees:		
Wages, salaries and bonus	3,818	
Staff welfare expenses	262	4,080
To Directors:		
Directors remuneration		78

To Loan providers:		
Debenture interest	144	
Interest on loan from financial institution	100	244
To Government:		
Provision for taxation	248	
Tax on distributed profit	21	269
To Shareholders:		
Proposed dividend		200
To Entity:		
Depreciation	506	
Transfer to reserve	185	
Retained profits	56	747
Gross value added applied		5,618

Profit and loss account at the beginning of the financial year was ₹63 lakhs.

Q.41 From the following value added statement, prepare profit and loss account of X Limited for the year ending 31.3.2016:

Sales		40,19,000
Less: Cost of bought in material		
Decrease in stock	24,000	
Purchases	20,20,000	
Manufacturing and other expenses	2,30,000	22,74,000
		17,45,000
Add: Other income		55,000
Gross value added		18,00,000
Gross value added applied		
To Employees:		
Salaries and wages		10,00,000
To Government:		
Current year tax	40,000	
Tax of earlier year	3,000	43,000
To Capital providers:		
Finance charges	4,69,000	
Proposed dividend	35,000	5,04,000
To Entity:		
Depreciation	2,44,000	
Development rebate reserve	10,000	
General reserve	10,000	
Retained profits	(11,000)	2,53,000
Gross value added applied		18,00,000

Profit and loss account at the beginning of the financial year was ₹38,000.

Q.42 The capital structure of H Limited is as under:

80,00,000 Equity shares of ₹10 each	₹800 lakhs
1,00,000 12 % Preference shares of ₹250 each	₹250 lakhs
1,00,000 10 % Debentures of ₹500 each	₹500 lakhs
10 % Term loan from bank	₹450 lakhs

The company's profit and loss account for the year showed a balance PAT of ₹100 lakhs, after appropriating equity dividend at 20 %. The company is in 40 % tax bracket. Treasury bonds carry 6.50 % interest and beta factor for the company may be taken at 1.50. The long run market rate of return may be taken at 16.50 %.

Calculate EVA.

[Study Material]

SARVAGYA INSTITUTE OF COMMERCE

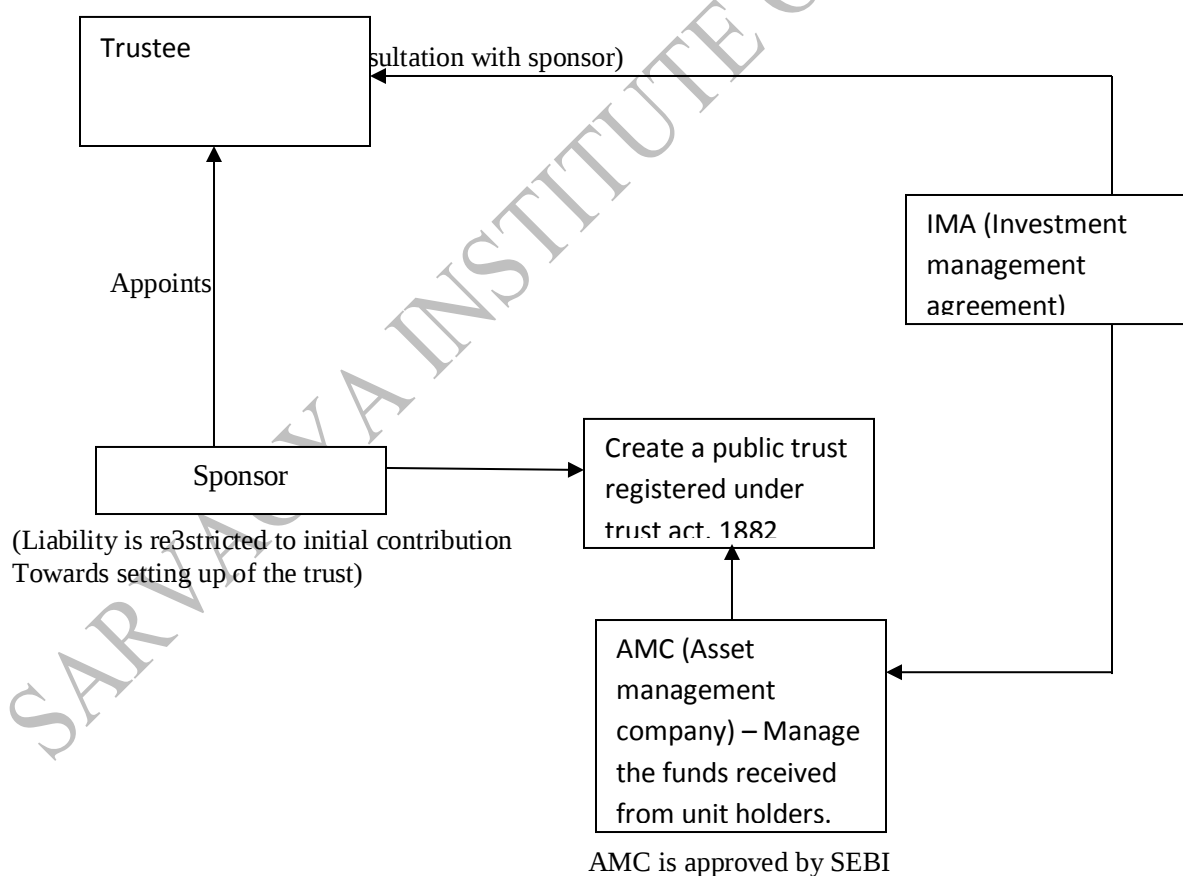
MUTUAL FUND

Meaning of Mutual Fund – A Mutual fund is a financial intermediary which acts as an instrument of investment. It collects funds from different investors to a common pool of investible funds and then invests these funds in a wide variety of investments opportunities. Small investors, who are unable to participate in capital market, can assess the stock market through the medium of mutual funds which can manage their funds for maximizing return. Thus a mutual fund is a pool of funds contributed by individual investors having common investment preferences.

Features and Characteristics of Mutual Fund—Features of Mutual fund are as under:

- (1) Mutual fund is a pool of financial resources. Investors bring their individual funds together.
- (2) Mutual funds are professionally managed. The resources collected by mutual funds are managed by professionals and experts in investment.
- (3) Mutual fund is an indirect investing. The individual investors invest in the mutual funds which in turn invest in shares, debentures and other securities in the capital market.
- (4) Investment in mutual fund is not borrowing – lending relationship. Investors do not lend money to the mutual fund, rather they invest.
- (5) Mutual fund is a representative of investors. The mutual funds collect the funds from investors under a particular investment scheme. As a representative, the mutual fund has to invest these funds as per the designated scheme only.

How to create a mutual fund -



Mutual fund schemes (Relevant only for theory purpose for SFM) – Mutual fund offers different types of schemes from time to time to attract the investors and to take care of their funds on the basis of nature of investment, types of operations and types of income distributions.

(a) Open – ended and Close – ended schemes—Open – ended scheme means a scheme of a mutual fund which offers units for sale without specifying any duration for redemption. On the other hand, close – ended scheme is one in which the period of redemption is specified. The open – ended mutual fund scheme sells and purchases the units of mutual fund on a continuous basis. Any investor can become a member or can exit. These sales or purchases of units take place at a price called NAV (Net asset value).

On the other hand, close – ended mutual fund scheme is one in which the limited number of units are sold to investors during a specified period. Thereafter, any transaction in these units can take place only in secondary market.

Difference between open – ended and close – ended scheme:

Open – ended scheme	Close – ended scheme
(1) No. of units keep changing on daily basis even after NFO (New fund offer). An investor buys units from the fund any time.	No. of units are fixed at the time of NFO. Investors can buy during NFO from mutual fund and after that from secondary market.
(2) These units are not traded on the stock – exchange (Unlisted)	These units are traded on stock exchange.
(3) Buy or sell of units of mutual fund is always at NAV of the fund (Which is declared on daily basis)	Since they are listed buy or sell is possible above or below NAV in the secondary market. Sometimes the scheme allows investor to redeem units after a certain time and in this case it is always at NAV
(4) No Fixed maturity period	Fixed maturity period

(b) Income fund and Growth fund – The mutual fund are called income funds when they promise a regular and / or guaranteed return in the form of dividends to the investors. The portfolio of these schemes is usually consisting of fixed income investments such as bonds, Debentures etc. The income schemes are also known as dividend schemes.

On the other hand, a growth fund scheme is one which offers capital appreciation as well as a variable dividend opportunity to the investors. The investors may get dividend income from the mutual fund on a regular basis and the capital appreciation is available in the form of increase in market price. Growth schemes are good and suitable for investors having long – term investment perspective.

Calculation of Net asset value (NAV) –

NAV = Total assets value – Total outside liabilities / Total no. of units
OR

NAV = Unit capital + Reserves and surplus / Total no. of units

Statement showing calculation of Net asset value

Particulars	Amount
Investment in listed shares and securities (Closing market price)	xxx
Debentures and Bonds (Closing traded price / Yield value)	xxx
Fixed income securities (Current yield)	xxx
Liquid assets (i.e. cash balance) (As per books)	xxx
Dividend and interest accrued (As per books)	xxx
Prepaid expenses	xxx
Other assets	xxx
Accrued expenses / Outstanding expenses	(xxx)
Short term / Long term loans	(xxx)
Other liabilities	(xxx)
Net assets value	xxx

Calculation of closing cash balance:

Opening cash balance (Amount received from sale of units – amount invested by mutual fund)	xxx
New units issued	xxx
Redemption of old units	(xxx)
Dividend received	xxx
Interest received	xxx
Expenses paid	(xxx)
Closing balance	xxx

Calculation of change in units issued by the mutual fund:

Opening balance of units	xxx
Add: New units issued	xxx
Less: Redemption of units	(xxx)
Closing balance of units	xxx

Calculation of return of mutual fund –

$$(a) \text{ NAV Return} = \frac{\text{NAV}_1 - \text{NAV}_0}{\text{NAV}_0} \times 100$$

$$(b) \text{ Holding period return} = \frac{\text{Capital gain} + \text{Dividend distribution} + (\text{NAV}_1 - \text{NAV}_0)}{\text{NAV}_0} \times 100$$

Note:

(i) Mutual fund pays income in form of capital gain when the asset price rises substantially.

(ii) Mutual fund return should be calculated on annual basis.

(iii) $\text{NAV}_1 - \text{NAV}_0$ basically represents unrealized gain or loss.

(c) Total return with reinvestment – Whenever there is re – investment opportunity available with investor, then we have to calculate holding period return with re – investment plan in the following manner:

Step: 1 Calculate amount of distribution received from mutual fund

Capital gain received (Capital gain per unit x No. of units held)	xxx
Dividend received (Dividend per unit x No. of units held)	xxx
Total distribution	xxx

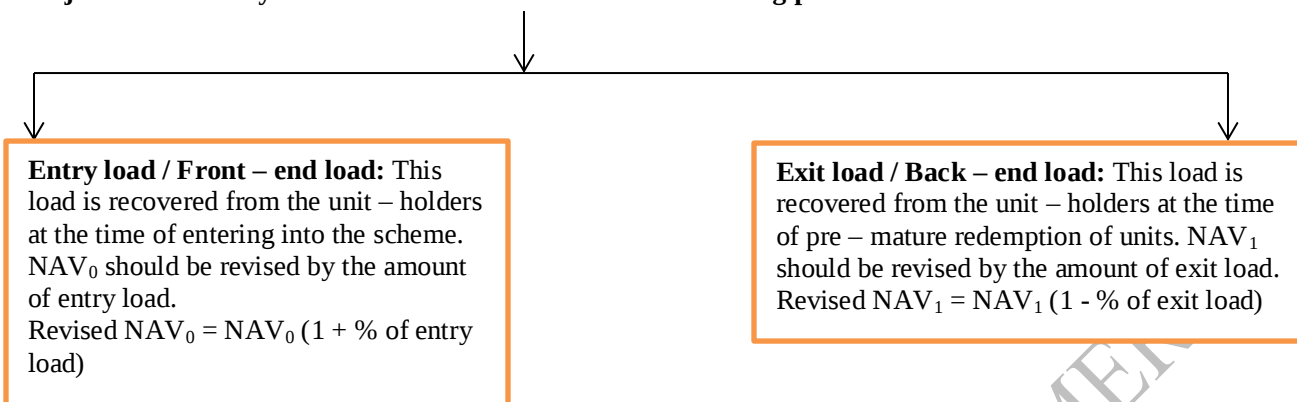
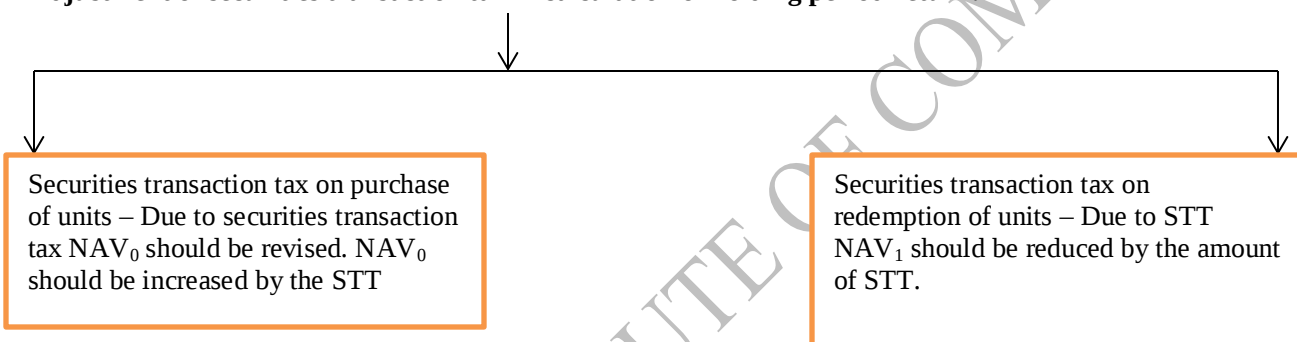
Step: 2 Calculate addition units to be received from mutual fund

$$\text{Number of additional units} = \frac{\text{Total distribution}}{\text{NAV of the day}}$$

Hence total number of units = Original units + Additional units

Step: 3 Calculate holding period return

$$\text{HPR} = \frac{(\text{Closing units} \times \text{NAV}_1) - (\text{Opening units} \times \text{NAV}_0)}{\text{Opening units} \times \text{NAV}_0} \times 100$$

Adjustment of entry load and exit load in calculation of holding period return:**Adjustment of securities transaction tax in calculation of holding period return:****ACCOUNTING ENTRIES IN THE BOOKS OF A MUTUAL FUND**

(1) For sale of units during NFO (New fund offer) period for the first time			
Bank a/c	Dr.	xxx	
To Unit capital a/c (No. of units * Face value)			xxx
(Being the sale of units during NFO at par)			
(2) For purchase of shares for investment			
Investment in shares a/c	Dr.	xxx	
To Bank a/c			xxx
(Being the purchase of shares)			
(3) For receipt of dividend on shares			
Bank a/c	Dr.	xxx	
To Investment in shares a/c (Pre – acquisition dividend)			xxx
To Dividend income a/c (Post – acquisition dividend)			xxx
(Being dividend received)			
(4) For purchase of debentures for investment			
Investment in Debentures a/c (Ex – interest proceeds + Brokerage)	Dr.	xxx	
Interest on debentures a/c (Accrued interest)	Dr.	xxx	
To Bank a/c			xxx
(Being the purchase of debentures)			
(5) For receipt of interest on debentures			
Bank a/c	Dr.	xxx	
To Interest on debentures a/c			xxx

(Being the interest received)			
(6) For transfer of interest on debentures and dividend on shares to revenue a/c			
Interest on Debentures a/c	Dr.	xxx	
Dividend on shares a/c	Dr.	xxx	
To Revenue a/c			xxx
(Being the transfer of interest on debentures and dividend on shares to revenue account)			
(7) For increase in market value of investment at the end of the accounting year			
(a) At the end of the accounting year			
Investment a/c	Dr.	xxx	
To Unrealized appreciation reserve a/c			xxx
(Being increase in market value of investment)			
(b) At the beginning of the next accounting year			
Unrealized appreciation reserve a/c	Dr.	xxx	
To Investment a/c			xxx
(Being increase in market value of investment reversed)			
(8) For decrease in market value of investment at the end of the accounting year			
Revenue a/c	Dr.	xxx	
To Investment a/c			xxx
(Being decrease in market value of investment)			
(9) For sale of debentures			
(a) To record sales of debentures			
Bank a/c (Sale proceeds excluding brokerage)	Dr.	xxx	
To Interest on debentures a/c (Accrued interest)			xxx
To Investment a/c (Ex – interest proceeds)			xxx
(Being the investments sold)			
(b) To record profit on sale			
Investment a/c	Dr.	xxx	
To Revenue a/c			xxx
(Being the profit on sale)			
Note: Profit on sale = Ex – interest proceeds (Excluding brokerage) – Average cost of debentures			
(c) To records loss on sale			
Revenue a/c	Dr.	xxx	
To Investment a/c			xxx
(Being the loss on sale)			
Note: Loss on sale = Average cost of debentures – Ex – interest proceeds (Excluding brokerage etc.)			
(10) To record sale of shares			
Bank a/c (Sale proceeds excluding brokerage)	Dr.	xxx	
To Investment a/c			xxx
(Being the investment sold)			
(11) To record profit on sale			
Investment a/c	Dr.	xxx	

To Revenue a/c			xxx
(Being profit on sale)			
Note: Profit on sale = Sale proceeds (excluding brokerage) – Average cost of shares			
(12) To record loss on sale			
Revenue a/c	Dr.	xxx	
To Investment a/c			xxx
(Being the loss on sale)			
Note: Loss on sale = Average cost of shares – Sale proceeds (excluding brokerage etc.)			

How shall the investments be Disclosed – These investments shall be disclosed into the following categories:

- (a) Equity shares
- (b) Preference shares
- (c) Privately placed Debentures / Bonds
- (d) Listed Debentures and Bonds
- (e) Term Loans
- (f) Central and State Government securities
- (g) Commercial papers
- (h) Others

Note: Accounting policy for valuation of investments should also be disclosed.

Accounting for investments in the financial statements of Mutual fund – For the purposes of the financial statements, mutual funds shall mark all investments to market and carry investments in the balance sheet at market value.

Depreciation	1. While making investments to market on balance sheet date, the excess of cost of acquisition over market value of securities on valuation date is treated as Depreciation which is unrealized loss. 2. The provision for Depreciation in the value of investments is created in the books by debiting the revenue account. The provision so created is shown as deduction from the value of investments in the balance sheet.
Appreciation	1. While marking investments to market on balance sheet date, the excess of market value of securities on valuation date over the cost of acquisition is treated as appreciation, which is unrealized gain. 2. Unrealized appreciation are directly transferred to the unrealized appreciation reserve with the corresponding debit to the investments account. The guidance note recommends the reversal of the unrealized appreciation reserve at the beginning of the next accounting year.
No Set off of Depreciation against appreciation	The gross value of depreciation on investments should be reflected in the revenue account rather than the same being netted off with the appreciation in the value of other investments.
Basis of Ascertainment of depreciation / appreciation	Depreciation / Appreciation on investments should be worked out on an individual investment basis or by category of investment basis, but not on an overall basis for the entire investment portfolio.
Disposal of investment	1. The profit / loss arising on the disposal of investment is the difference between the selling price and cost. 2. The profit arising on disposal of investment is recognized fully in the revenue account. 3. The loss on disposal of investment is recognized fully in the revenue account, if the investments are sold in the same year in which they are purchased. 4. If an investment is sold in any year subsequent to year of purchase, loss on

	disposal is charged first against provision for depreciation to the extent of balance available, and the balance of loss, if any, should be charged directly to the revenue account.
Recognition of dividend income	1. Dividend income accrued from Quoted investments should be recognized, on the date the share is quoted on an ex – dividend basis. 2. Dividend income earned from Unquoted investments should be recognized, on the date of declaration. 3. Income accrued: Where income receivable on investments has accrued but has not been received for the period specified in the SEBI guidelines, the income accrued should be debited to revenue account as provision. 4. Bonus shares: Bonus shares to which the scheme becomes entitled should be recognized only when the original shares on which the bonus entitlement accrues, are traded on the stock exchange on an ex – bonus basis. 5. Right entitlements: Rights entitlements should be recognized only when the original shares on which the right entitlements accrues, are traded on the stock exchange on an ex – right basis.
Cost of investments	1. Cost of investments acquired or purchased should include brokerage, stamp charges and any charge customarily included in the broker's bought note. 2. In respect of privately placed debt instruments any front - end discount offered should be deducted from the cost of the investment. 3. In respect of cum – interest purchase of interest bearing investments, interest paid for the period from the last interest due date up to the date of purchase shall not be treated as a cost of purchase but must be debited to interest recoverable account. 4. In respect of cum – interest sale of interest bearing investments, interest received at the time of sale for the period from the last interest due date up to sale must not be treated as an addition to sale value but must be credited to interest recoverable account. 5. Average cost method: In determining the holding cost of investments and the gain or loss on sale of investments, the average cost method must be followed.

DIVIDEND EQUALISATION:

Whenever mutual fund issued new units during the year, it recovers additional amount on and above the NAV as on the date of issue of new units. This additional amount is known as dividend equalisation. This amount is recovered from new unit holders to make parity between old investors and new investors.

(i) How to calculate amount of dividend equalisation per unit:

$$\text{Dividend equalisation per unit} = \frac{\text{Income earned up to the date of issuing new units}}{\text{Number of old units}}$$

Total amount recovered as dividend equalisation = Dividend equalisation per unit x Number of new units

(ii) Statement showing calculation of total distributable earnings of mutual fund:

Total profit earned during the year	xxx
Add: Amount recovered as dividend equalisation	xxx
Total distributable earnings	xxx

(iii) Statement showing allocation of earnings between old and new unit holders:

Particulars	Old unit holders	New unit holders
Distributable earnings per unit $\left(\frac{\text{Total distributable earnings}}{\text{Total number of units}} \right)$	xxx	xxx
Less: Amount already recovered as dividend equalisation	(xxx)	(xxx)
Actual earnings	xxx	xxx

(iv) Accounting entries for sale of units and distribution of dividend:

For sale of units of an open – ended scheme	Bank a/c (No. of units * NAV)	Dr.
	To Unit capital a/c (No. of units * face value)	
	To Reserve a/c (Balancing figure)	
	To Dividend equalisation a/c (No. of units * dividend equalisation per unit)	
For transfer of dividend equalisation to revenue account	Dividend equalisation a/c	Dr
	To Revenue a/c	
For distribution of dividend	Revenue a/c	Dr.
	To Bank a/c	

Dividend equalisation per unit	Income that has arisen up to the date of sale of the units
	No. of old units
Why required	Dividend equalisation is required so as to bring parity between old investors and new investors who are not entitled to any share of the income of a mutual fund scheme which arose before they bought their new units.
Process	1. At the time of sale of units of an open – ended scheme an equalisation payment [i.e. No. of units * Dividend equalisation per unit] is added to the cost of new units by transferring to dividend equalisation account. 2. At the time of dividend equalisation, equalisation payment is transferred from dividend equalisation account to revenue account.

Accounting treatment of sale / Repurchase of units

Sale of units under an open – ended scheme	1. Bank account is debited with the sale proceeds of unit sold. 2. Face value is credited to unit capital account. 3. An equalisation payment (i.e. No. of units * Dividend equalisation per unit) is credited to dividend equalisation account. 4. Balance is credited to reserves.
Repurchase of units under an open – ended scheme	1. Face value is debited to unit capital account. 2. An equalisation payment (No. of units * dividend equalisation per unit) is debited to dividend equalisation account. 3. Balance is to be debited / credited to reserves. 4. Bank account is credited with payment made for units repurchased.
Repurchase of units under a close - ended scheme	In addition to previous four points: A proportionate part of the unamortized initial issue expenses should also be transferred to the reserves so that the balance carried forward on that account is proportional to the number of units remaining outstanding.
Treatment of underwriting commission	1. Where there is no development on the scheme underwriting commission should be recognized as revenue. 2. Where there is development on the scheme, the full underwriting commission received and not merely the portion applicable to the development should be reduced from the cost of the investment.

Format of investment in debentures a/c

Date	Particulars	Nominal value	Interest	Cost	Date	Particulars	Nominal value	Interest	Cost
	To Balance b/d	xxx	Xxx	xxx		By bank		Xxx	
	To bank a/c	xxx	Xxx	xxx		By bank (sale)	xxx	Xxx	xxx
	To profit and loss a/c			xxx		By profit and loss a/c			xxx
						By Balance c/d	xxx	Xxx	xxx

Movement in unit capital and movement of unit holder's fund:

The movement in unit capital may be disclosed as follows:

Particulars	No. of units	Amount
Opening balance	xxx	xxx
Add: Units sold during the year	xxx	xxx
Less: Units repurchased during the year	(xxx)	(xxx)
Closing balance	xxx	xxx

The movement of unit holder's fund may be disclosed as follows:

Particulars	Amount
Opening balance of net assets	xxx
Add: Par value of units sold	xxx
Add: Net income for the year	xxx
Add: Transfer from reserve / equalisation fund	xxx
Less: Par value of units repurchased / redeemed	(xxx)
Closing balance of net asset	xxx

QUESTION BANK

Q.1 From the following details, compute NAV of each unit of the mutual fund – (a) Scheme size – ₹ 10,00,00,000 (b) Face value per unit – ₹10 (c) Investments in quoted shares having market value ₹ 25,00,00,000. [RTP – Nov. 04]

[ANSWER – NAV = 25]

Q.2 On 1st April, 2011, Fair return Mutual fund has the following assets and prices at 3.00 p.m.

Shares of	No. of shares	Market price per share
P Ltd.	5,000	₹19.70
Q Ltd.	25,000	₹ 482.60
R Ltd.	5,000	₹ 264.40
S Ltd.	50,000	₹ 674.90
T Ltd.	15,000	₹ 25.90
No of units of fund		4,00,000 units

Calculate:

(a) NAV of the fund.

(b) Assuming Mr. M send a cheque of ₹25,00,000 to the fund on 1st April, 2011 and fund manager purchases 9,000 shares of R Ltd. and balance is held in bank. What will be the new position of the fund.

(c) Now suppose on 2nd April, 2011 at 3.00 p.m. the market price of shares is as follows:

Shares	₹
P Ltd.	20.30
Q Ltd.	513.70
R Ltd.	290.80
S Ltd.	671.90
T Ltd.	44.20

Calculate the new NAV?

[RTP – May, 2012]

[ANSWER – (a) NAV = 119.05; (b) No. of units = 4,21,000; (c) NAV = 122.075]

Solution:

(a) Statement showing NAV of the fund:

Name of company	Number of shares	Market price per share	Market value
P	5,000	19.70	98,500
Q	25,000	482.60	1,20,65,000
R	5,000	264.40	13,22,000
S	50,000	674.90	3,37,45,000
T	15,000	25.90	3,88,500
Net asset value			4,76,19,000

$$\text{NAV} = \frac{4,76,19,000}{4,00,000} = 119.05$$

(b) New position of the fund:

Opening balance of units	4,00,000
Add: Additional units issued $\left(\frac{25,00,000}{119.05} \right)$	21,000
New position of the fund	4,21,000

(c) Statement showing NAV of the fund on 2nd April:

Name of company	Number of shares	Market price per share	Market value
P	5,000	20.30	1,01,500
Q	25,000	513.70	1,28,42,500
R	14,000	290.80	40,71,200
S	50,000	671.90	3,35,95,000
T	15,000	44.20	6,63,000
Cash balance			1,20,400
Net asset value			5,13,93,600

$$\text{NAV} = \frac{5,13,93,600}{4,21,000} = 122.075$$

Q. 3 Sparrow holdings is a SEBI registered mutual fund which made its maiden NFO (new fund offer) on 10th April, 2010 ₹10 face value per unit. Subscription was received for 90 lakhs units. An underwriting arrangement was also entered into with Affinity capital market Ltd. that agreed to underwrite the entire NFO of 100 lakh units on a commission of 1.5 %. Out of the monies received ₹892.50 lakhs was invested in various capital market instruments. The marketing expenses for the NFO amounted to ₹11.25 lakhs. During the financial year ended March, 2011 the fund sold securities having cost of ₹127.25 lakhs (FV ₹ 54.36 lakhs) for ₹141.25 lakhs. The fund in turn purchased securities for ₹130 lakhs. The management expenses of the fund are regulated by SEBI stipulations which state that the same shall not exceed 0.25 % of the average funds invested during the year. The actual amount spent towards management expenses was ₹2.47 lakhs of which ₹47,000 was in arrears. The dividends earned on the investments held amounted to ₹ 2.51 lakhs on which a sum of ₹25,000 is yet to be collected. The fund distributed 80 % of realized earnings. The closing market value of the portfolio was ₹1120.23 lakhs. You are required to determine the closing per unit NAV of the fund.

[CA – Nov. 2011]

[ANSWER – NAV = 12; Closing cash balance = 79.99 lakhs]

Solution:

$$\text{NAV of the fund} = \frac{\text{Net assets of the fund}}{\text{Total no. of units}}$$

$$\frac{1200}{100} = 12$$

Working note:

Calculation of closing cash balance:

Opening cash balance:		
Amount received from sale of units	1,000	
Less: invested in capital market instrument	892.50	107.50
Underwriting commission (1,000 * 1.50 %)		(15)
Marketing expenses		(11.25)
Proceeds from sale of securities		141.25
Purchase cost of securities		(130)
Management expenses	2.23	
Less: Outstanding expenses	0.47	1.76
Dividend received		2.26
Distribution of dividend		(1.808)
Capital gain distributed (141.25 – 127.25) * 80 %		(11.20)
Closing cash balance		79.99

Calculation of allowable management expenses: Lower of:

(a) Actual management expenses	2.47
(b) 0.25 % of average fund invested (893.875 * 0.25 %)	2.23

Hence allowable expenses	2.23
--------------------------	------

Calculation of average fund invested:

$$\text{Average fund invested} = \frac{\text{Opening investment} + \text{Closing investment}}{2}$$

$$= \frac{892.50 + 895.25}{2} = 893.875$$

Calculation of closing balance of fund:

Opening balance of fund	892.50
Add: Purchase cost of new securities	130
Less: Cost of securities sold	(127.25)
Closing balance of fund	895.25

Statement of net asset:

Market value of securities	1,120.23
Closing cash balance	79.99
Accrued dividend	0.25
	1200.47
Less: Outstanding expenses	0.47
Net asset	1200

Q.4 Calculate the NAV of mutual fund from the following information:

1.4.09: Outstanding units 1 crore of ₹10 each, ₹10 crores (Market value ₹16 crores)

Outstanding liabilities: ₹5 crores

Other information:

- (i) 20 lakhs units were sold during the year at ₹ 24 per unit.
- (ii) No additional investments were made during the year and as at the year end 50 % of the investments held at the beginning of the year were quoted at 80 % of book value.
- (iii) 10 % of the investments have declined permanently 10 % below cost.
- (iv) At the year end 31.3.2010 outstanding liabilities were 1 crore.
- (v) Remaining investments were quoted at ₹13 crores.

[CA - May, 2011]

[ANSWER – NAV = 14.75]

Solution:

Calculation of closing cash balance:

Sale value of units (20 * 24)	480
Less: payment of liabilities	400
Closing cash balance	80

Calculation of net asset:

Closing cash balance	80
Market value of investments:	
(a) 50 % of book value traded at 80 % (10 * 50 % * 80 %)	4
(b) 10 % of book value traded at 90 % (10 * 10 % * 90 %)	0.90
(c) Remaining investment	13
	18.70
Less: Outstanding liabilities	1
Net assets	17.70

Calculation of number of units:

Opening balance of outstanding units	1
Add: New units issued	0.20

Total units	1.20
-------------	------

$$\text{NAV} = \frac{\text{Net assets of the fund}}{\text{Total no. of units}}$$

$$\frac{17.70}{1.20} = 14.75$$

Q.5 A Mutual fund raised funds on 1.4.2007 by issuing 10 lakhs units @ ₹17.50 per unit. Out of this fund, ₹160 lakhs invested in several capital market instruments. The initial expenses amount to ₹9 lakhs. During June, 2007, the fund sold certain securities worth ₹100 lakhs for ₹125 lakhs and it bought certain securities for ₹90 lakhs. The fund management expenses amounting to ₹5 lakhs per month. The dividend earned was ₹3 lakhs. 80 % of realised earnings were distributed among the unit holders. The market value of the portfolio was ₹175 lakhs. Determine NAV per unit as on 30.6.07. [CA – Nov. 08]

[ANSWER – NAV = 18.16]

Solution:

Calculation of closing cash balance:

Opening cash balance:		
Amount received from issue of units	175	
Less: Amount invested	160	
Initial expenses	9	6.00
Add: Sale value of securities		125.00
Less: Purchases of securities		(90.00)
Less: Fund management expenses		(15.00)
Add: Dividend received		3.00
Less: Dividend distributed (3 x 80 %)		(2.40)
Less: Capital gain distributed (125 - 100) x 80 %		(20.00)
Closing cash balance		6.60

Calculation of net asset value:

Particulars	₹
Market value of portfolio	175.00
Add: Closing cash balance	6.60
Net asset	181.60

$$\text{NAV} = \frac{181.60}{10} = 18.16$$

Q.6 A mutual fund raised 100 lakh on April 1, 2009 by issue of 10 lakhs units of ₹10 per unit. The fund invested in several capital market instruments to build a portfolio of ₹90 lakhs. The initial expenses amounted to ₹7 lakh. During April, 2009, the fund sold certain securities of cost ₹38 lakhs for ₹40 lakhs and purchased certain securities for ₹28.20 lakhs. The fund management expenses for the month amounted to ₹4.50 lakhs which ₹0.25 lakh was in arrears. The dividend earned was ₹1.20 lakhs. 75 % of the realized earnings were distributed. The market value of the portfolio on 30.4.09 was ₹101.90 lakh. Determine NAV per unit. [CA – Nov. 09]

[ANSWER – NAV = 11.10; Closing cash balance = 9.35 lakhs]

Solution:

Calculation of closing cash balance:

Opening cash balance (100 - 90)	10
Initial expenses	(7)
Sale of securities	40

Purchase of securities	(28.20)
Management expenses (4.50 – 0.25)	(4.25)
Dividend earned	1.20
Distribution of dividend (1.20 * 75 %)	(0.90)
Distribution of capital gain (40 - 38) * 75 %	(1.50)
Closing cash balance	9.35

Statement of net asset:

Closing cash balance	9.35
Market value of securities	101.90
	111.25
Less: Outstanding expenses	(0.25)
Net assets	111

$$\text{NAV} = \frac{\text{Net assets of the fund}}{\text{Total no. of units}}$$

$$\frac{111}{10} = 11.10$$

Q.7 Find out NAV per unit from the following information of scheme money plant.

Name of scheme	Money plant
Size of the scheme	₹100 lakhs
Face value of shares	₹10
Number of the outstanding shares	10 lakhs
Market value of the fund's investments	₹180 lakhs
Receivables	₹2 lakhs
Liabilities	₹1 lakhs

[RTP - SFM]

Solution:

Statement showing calculation of net asset value:

Market value of investment	180 lakhs
Add: Receivables	2
Less: Liabilities	(1)
Net asset	181
Number of units of scheme	10
NAV	18.10

Q. 8 A mutual fund made an issue of 10,00,000 units of ₹10 each on January 01, 2008. No entry load was charged. It made the following investments:

	₹
50,000 equity shares of Rs. 100 each @ ₹160	80,00,000
7 % Government securities	8,00,000
9 % Debentures (Unlisted)	5,00,000
10 % Debentures (Listed)	5,00,000
	98,00,000

During the year, dividends of ₹12,00,000 were received on equity shares. Interest on all types of debt securities was received as and when due. At the end of the year equity shares and 10 % debentures are quoted at 175 % and 90 % respectively. Other investments are at par. Find out the net asset value (NAV) per unit given that operating expenses paid during the year amounting to ₹5,00,000. Also find out the NAV, if the Mutual Fund had distributed a dividend of ₹0.80 per unit during the year to the unit holders.

[CA – Nov. 09]

[ANSWER – NAV = 11.551; 10.751; Closing cash balance = 10,51,000]

Solution:

Calculation of closing cash balance:

Opening cash balance (100 - 98)	2,00,000
Dividend received	12,00,000
Interest received on 7 % Government securities (8,00,000 x 7 %)	56,000
Interest on 9 % Debentures (5,00,000 x 9 %)	45,000
Interest on 10 % Debentures (5,00,000 x 10 %)	50,000
	15,51,000
Less: Operating expenses	5,00,000
Closing cash balance	10,51,000

Calculation of value of net asset:

Closing cash balance	10,51,000
7 % Government securities	8,00,000
Equity shares (50,000 x 175)	87,50,000
9 % Debentures	5,00,000
10 % Debentures (5,00,000 x 90 %)	4,50,000
Total net asset	1,51,51,000
Number of units	10,00,000
Net asset value (NAV) per unit	11.551

Q.9 Based on the following information, determine the NAV of a regular income scheme on per unit basis.

	₹Crores
Listed shares at cost (ex – dividend)	20
Cash in hand	1.23
Bonds and debentures at cost	4.3
Of, these bonds not listed and quoted	1
Other fixed interest securities at cost	4.5
Dividend accrued	0.8
Amount payable on shares	6.32
Expenditure accrued	0.75
Number of units (₹10 face value)	20 lakhs
Current realizable value of fixed income securities of face value of ₹100	106.5
The listed shares were purchased when index was	1,000
Present index is	2,300
Value of listed bond and debentures at NAV date	8

There has been a diminution of 20 % in unlisted bonds and debentures other fixed interest securities are at cost.

[CA – May, 2010]

[ANSWER – NAV = 271.30]**Solution:**

Calculation of net asset:

Listed shares (20 / 1,000 * 2300)	46
Cash in hand	1.23
Bonds and debentures (listed)	8
Bonds and debentures (unlisted)	0.80
Fixed interest securities	4.50
Dividend accrued	0.80
Amount payable on shares	(6.32)
Expenditure accrued	(0.75)
	54.26

$$\text{NAV} = \frac{\text{Net assets of the fund}}{\text{Total no. of units}}$$

$$\frac{54.26}{0.20} = 271.30$$

Q.10 A mutual fund Co. has the following assets under it on the close of business as on:

Company	No. of shares	1 st Feb 2012 (market price per share)	2 nd Feb 2012 (market price per share)
L Ltd.	20,000	20.00	20.50
M Ltd.	30,000	312.40	360
N Ltd.	20,000	361.20	383.10
P Ltd.	60,000	505.10	503.90

Total No. of units – 6,00,000

(i) Calculate Net asset value (NAV) of the fund.

(ii) Assuming one Mr. A submits a cheque of ₹30,00,000 to the mutual fund and the fund manager of this company purchases 8,000 shares of M Ltd and the balance amount is held in bank. In such a case, what would be the position of the fund?

(iii) Find new NAV of the fund as on 2nd February, 2012.

[CA – May, 2012]

[ANSWER – (a) NAV = 78.84; (b) No. of units = 6,38,052; (c) NAV = 82.26]

Solution:

(i) Calculation of net asset:

Investment in L Ltd. (20,000 * 20)	4,00,000
Investment in M Ltd. (30,000 * 312.40)	93,72,000
Investment in N Ltd. (20,000 * 361.20)	72,24,000
Investment in P Ltd. (60,000 * 505.10)	3,03,06,000
	4,73,02,000

$$\text{NAV} = \frac{\text{Net assets of the fund}}{\text{Total no. of units}}$$

$$\frac{4,73,02,000}{6,00,000} = 78.84$$

(ii) Calculation of new number of units:

Opening balance of units outstanding	6,00,000
Add: new units issued (30,00,000 / 78.84)	38,052
Total number of outstanding units	6,38,052

Calculation of cash balance:

Fund received	30,00,000
Less: Investment made (8,000 * 312.40)	24,99,200
Cash balance	5,00,800

Calculation of revised net asset:

Investment in L Ltd. (20,000 * 20.50)	4,10,000
Investment in M Ltd. (38,000 * 360)	1,36,80,000
Investment in N Ltd. (20,000 * 383.10)	76,62,000
Investment in P Ltd. (60,000 * 503.90)	3,02,34,000
Cash balance	5,00,800
Total net asset	5,24,86,800

$$\text{NAV} = \frac{\text{Net assets of the fund}}{\text{Total no. of units}}$$

$$\frac{5,24,86,800}{6,38,052} = 82.26$$

Q.11 A has invested in three Mutual fund schemes as per details below:

Particulars	MF A	MF B	MF C
Date of investment	1.12.2007	1.1.2008	1.3.2008
Amount of investment	50,000	1,00,000	50,000
NAV at entry date (₹)	10.50	10	10
Dividend received up to 31.3.2007	950	1,500	Nil
NAV as at 31.3.2007 (₹)	10.40	10.10	9.80

What is the effective yield on per annum basis in respect of each of the three schemes to A up to 31.3.2008?
[CWA – Study material]

Solution:

Particulars	Mutual fund A	Mutual fund B	Mutual fund C
Date of investment	1.12.2007	1.1.2008	1.3.2008
Amount of investment	50,000	1,00,000	50,000
NAV at entry date (NAV ₀)	10.50	10	10
No. of units purchased	4,761.905	10,000	5,000
Dividend amount	950	1,500	Nil
Dividend per unit	0.20	0.15	Nil
NAV as at 31.3.2012 (NAV ₁)	10.40	10.10	9.80

$$\begin{aligned} \text{(a) Holding period return for mutual fund A} &= \frac{\text{Dividend per unit} + (\text{NAV}_1 - \text{NAV}_0)}{\text{NAV}_0} \times 100 \\ &= \frac{0.20 + (10.40 - 10.50)}{10.50} \times 100 = 0.9524 \% \end{aligned}$$

$$\text{Annualized return} = 0.9524 / 4 \times 12 = 2.857 \%$$

$$\begin{aligned} \text{(b) Holding period return for mutual fund B} &= \frac{\text{Dividend per unit} + (\text{NAV}_1 - \text{NAV}_0)}{\text{NAV}_0} \times 100 \\ &= \frac{0.15 + (10.10 - 10)}{10} \times 100 = 2.50 \% \end{aligned}$$

$$\text{Annualized return} = 2.5 / 3 \times 12 = 10 \%$$

$$\begin{aligned} \text{(c) Holding period return for mutual fund C} &= \frac{\text{Dividend per unit} + (\text{NAV}_1 - \text{NAV}_0)}{\text{NAV}_0} \times 100 \\ &= \frac{\text{Nil} + (9.80 - 10)}{10} \times 100 = -2 \% \end{aligned}$$

$$\text{Annualized return} = -2 / 1 \times 12 = -24 \%$$

Q. 12 Ramesh Goyal has invested in three mutual funds. From the details given below, find out effective yield on per annum basis in respect of each of the schemes to Ramesh Goyal up to 31st March, 2012:

Particulars	MF A	MF B	MF C
Date of investment	1.12.2011	1.1.2012	1.3.2012
Amount of investment	1,00,000	2,00,000	1,00,000
NAV at entry date (₹)	10.50	10	10
Dividend received up to 31.3.2012	1900	3,000	Nil
NAV as at 31.3.2012 (₹)	10.40	10.10	9.80

[CA – Nov. 2012]

[ANSWER – HPR = 2.85 %; 10 %; -24 %]

Solution:

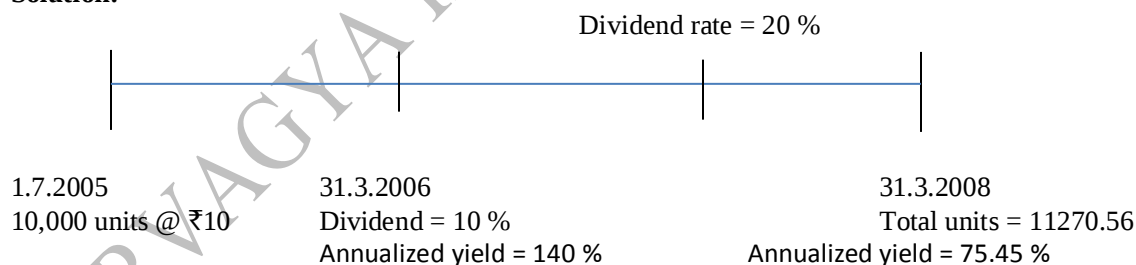
Particulars	Mutual fund A	Mutual fund B	Mutual fund C
Date of investment	1.12.2011	1.1.2012	1.3.2012
Amount of investment	1,00,000	2,00,000	1,00,000
NAV at entry date (NAV ₀)	10.50	10	10
No. of units purchased (1,00,000 / 10.50)	9,523.81	20,000	10,000
Dividend amount	1,900	3,000	Nil
Dividend per unit (1900 / 9523.81)	0.20	0.15	Nil
NAV as at 31.3.2012 (NAV ₁)	10.40	10.10	9.80

(a) Holding period return for mutual fund A = $\frac{\text{Dividend per unit} + (\text{NAV}_1 - \text{NAV}_0)}{\text{NAV}_0} \times 100$
 $= \frac{0.20 + (10.40 - 10.50)}{10.50} \times 100 = 0.9524 \%$
 Annualized return = $0.9524 / 4 \times 12 = 2.857 \%$

(b) Holding period return for mutual fund B = $\frac{\text{Dividend per unit} + (\text{NAV}_1 - \text{NAV}_0)}{\text{NAV}_0} \times 100$
 $= \frac{0.15 + (10.10 - 10)}{10} \times 100 = 2.50 \%$
 Annualized return = $2.5 / 3 \times 12 = 10 \%$

(c) Holding period return for mutual fund C = $\frac{\text{Dividend per unit} + (\text{NAV}_1 - \text{NAV}_0)}{\text{NAV}_0} \times 100$
 $= \frac{\text{Nil} + (9.80 - 10)}{10} \times 100 = -2 \%$
 Annualized return = $-2 / 1 \times 12 = -24 \%$

Q. 13 On 01.07.2005 Mr. A invested in 10,000 units of face value of ₹10 per unit. On 31.03.2006 dividend was paid @ 10% and annualized yield was 140 %. On 31.03.2007, 20% dividend was given. On 31.03.2008, Mr. A redeemed his all his 11,270.56 units when his annualized yield was 75.45 % over the period of his holding. What are the NAVs as on 31.03.2006, 31.03.2007 and 31.03.2008 ? [CA – RTP – June, 09]

Solution:

(a) NAV as on 31.3.2006:
 Annualized yield = 140 %, so yield for 9 months = $140 / 12 \times 9 = 105 \%$
 Return earned = $1,00,000 \times 105 \% = 1,05,000$
 Total value of investment = 2,05,000
 Dividend paid = 10 % of 1,00,000 = 10,000
 $\text{NAV} = \frac{2,05,000 - 10,000}{10,000} = 19.50$

(b) NAV as on 31.3.2007:
 Closing balance of units:

Opening balance	10,000
Add: additional units issued (10,000 / 19.50)	512.82
	10512.82

Dividend received for the year ended 31.3.2007 = 20 % of (10,512.82 units * 10)
= 1,05,128.20 * 20 % = 21,025.64

No. of units issued by the mutual fund for this dividend = 11,270.56 – 10,512.82 = 757.74

$$NAV = \frac{21,025.64}{757.74} = 27.75$$

(c) NAV as on 31.3.2008:

Annualized return = 75.45 %

$$\text{Annualized return} = \frac{\text{Total return}}{\text{Initial investment}} \times 100 \times \frac{12}{33}$$

$$75.45 = \frac{\text{Total return}}{1,00,000} \times 100 \times \frac{12}{33}$$

Total return = 2,07,487.50

Closing value of investment = 2,07,487.50 + 1,00,000 = 3,07,487.50

$$NAV = \frac{3,07,487.50}{11,270.56} = 27.28$$

Q.14 A Mutual Fund having 1000 units has shown its NAV of ₹9.75 and ₹10.35 at the beginning and at the end of the year respectively. The Mutual Fund has given two options:

- (i) Pay ₹0.85 per unit as dividend and ₹0.60 per unit as a capital gain, or
- (ii) These distributions are to be reinvested at an average NAV of ₹9.75 per unit.

What difference it would make in terms of return available and which option is preferable?

[CA – June, 09]

[ANSWER – HPR = (a) 21.02 % ; (b) 21.94 %]

Solution:

(i) Option 1:

Dividend = 0.85 per unit

Capital gain = 0.60 per unit

NAV₀ = 9.75 and NAV₁ = 10.35

$$\text{Holding period return} = \frac{\text{Dividend income} + \text{Capital gain income} + (\text{NAV}_1 - \text{NAV}_0)}{\text{NAV}_0} \times 100$$

$$\frac{0.85 + 0.60 + (10.35 - 9.75)}{9.75} \times 100 = 21.026 \%$$

(ii) Option 2: Holding period return with re - investment

Total dividend = 1,000 * 0.85 = 850

Total capital gain = 1,000 * 0.60 = 600

Total return = 1,450

Number of additional units = 1,450 / 9.75 = 148.718 units

Total number of units = 1,000 + 148.718 = 1148.718 units

$$\text{HPR} = \frac{(\text{Closing units} \times \text{NAV}_1) - (\text{Opening units} \times \text{NAV}_0)}{\text{Opening units} \times \text{NAV}_0} \times 100$$

$$\text{HPR} = \frac{(1,148.718 \times 10.35) - (1,000 \times 9.75)}{1,000 \times 9.75} \times 100 = 21.94 \%$$

Q. 15 On 1st April, 09 Fair return mutual fund has the following assets and prices at 4.00 p.m.

Shares	No. of shares	Market price per share (₹)
A Ltd.	10,000	19.70
B Ltd.	50,000	482.60
C Ltd.	10,000	264.40
D Ltd.	1,00,000	674.90
E Ltd.	30,000	25.90
No. of units of funds		8,00,000

Calculate:

(a) NAV of the fund

(b) Assuming Mr. X, a HNI, send a cheque of ₹50,00,000 to the fund and fund manager purchases 18,000 shares of C Ltd. and balance is held in bank. Then what will be position of fund.

(c) Now suppose on 2nd April 2009 at 4.00 p.m. the market price of shares is as follows:

A Ltd.	₹20.30
B Ltd.	₹513.70
C Ltd.	₹290.80
D Ltd.	₹671.90
E Ltd.	₹44.20

Then what will be new NAV.

[CA – Nov. 2011]

[ANSWER – (a) NAV = 119.05 (b) 8,42,000 units; (c) 122.07]

Solution:

(a) Statement of Net asset:

Shares of A Limited (10,000 * 19.70)	1,97,000
Shares of B Limited (50,000 * 482.60)	2,41,30,000
Shares of C Limited (10,000 * 264.40)	26,44,000
Shares of D Limited (1,00,000 * 674.90)	6,74,90,000
Shares of E Limited (30,000 * 25.90)	7,77,000
	9,52,38,000

NAV = 9,52,38,000 / 8,00,000 = 119.05

(b)

Calculation of revised units of mutual fund

Number of outstanding units	8,00,000
Add: Units issued (50,00,000 / 119.05)	42,000
Total units	8,42,000

Calculation of closing cash balance:

Fund received from unit holder	50,00,000
Less: Investment (18,000 * 264.40)	47,59,200
Cash balance	2,40,800

Calculation of revised NAV

Shares of A Limited (10,000 * 20.30)	2,03,000
Shares of B Limited (50,000 * 513.70)	2,56,85,000
Shares of C Limited (28,000 * 290.80)	81,42,400
Shares of D Limited (1,00,000 * 671.90)	6,71,90,000
Shares of E Limited (30,000 * 44.20)	13,26,000
Cash balance	2,40,800
	10,27,87,200

NAV = 10,27,87,200 / 8,42,000 = 122.075

Q.16 A mutual fund that has a net asset value of ₹20 at the beginning of month-made income and capital gain distribution of ₹0.0375 and ₹0.03 per share respectively during the month, and then ended the month with a net asset value of Rs. 20.06. Calculate monthly return? [CA – May, 03]

[ANSWER – HPR = 0.64 %; 7.65 %]

Solution:

$$\text{Holding period return} = \frac{\text{Dividend income} + \text{Capital gain income} + (\text{NAV1} - \text{NAV0})}{\text{NAV0}} \times 100$$

$$\frac{0.375 + 0.03 + (20.06 - 20)}{20} \times 100 = 0.6375 \%$$

$$\text{Annual return} = 0.6375 \times 12 = 7.65 \%$$

Q. 17 A has invested in three Mutual Fund Schemes as per details below:

	MFA	MFB	MFC
Date of investment	01.12.2003	01.01.2004	01.03.2004
Amount invested	₹60,000	₹1,00,000	₹ 50,000
Net asset Value (NAV) at entry date	₹ 10.50	₹ 10	₹ 10
Dividend income	₹ 950	₹ 1,500	-
NAV as at 31.03.2004	₹ 10.40	₹ 10.10	₹ 9.80

Required:

What is the effective yield on per annum basis in respect of each of the three schemes to Mr. A up to 31.03.2004? [CA – Nov. 04]

[ANSWER – 1.886 %; 10 %; -24 %]

Solution:

Particulars	MF A	MF B	MF C
Amount of investment	60,000	1,00,000	50,000
NAV at entry date	10.50	10	10
Number of units	5,714.286	10,000	5,000
Amount of dividend	₹950	₹1,500	Nil
Dividend per unit	0.166	0.15	-
NAV at the end	10.40	10.10	9.80

Calculation of HPR:

$$\text{MF}_A = \frac{(10.40 - 10.50) + 0.166}{10.50} \times 100 \times \frac{12}{4} = 1.886 \%$$

$$\text{MF}_B = \frac{(10.10 - 10) + 0.15}{10} \times 100 \times \frac{12}{3} = 10 \%$$

$$\text{MF}_C = \frac{(9.80 - 10) + 0}{10} \times 100 \times \frac{12}{1} = (24 \%)$$

Q. 18 A Mutual Fund having 300 units has shown its NAV of ₹8.75 and ₹ 9.45 at the beginning and at the end of the year respectively. The Mutual Fund has given two options:

Pay ₹ 0.75 per unit as dividend and ₹ 0.60 per unit as a capital gain, or

These distributions are to be reinvested at an average NAV of ₹ 8.65 per unit.

What difference it would make in terms of return available and which option is preferable?

[CA – May, 06]

[ANSWER – (a) 23.43 %; 24.85 %]

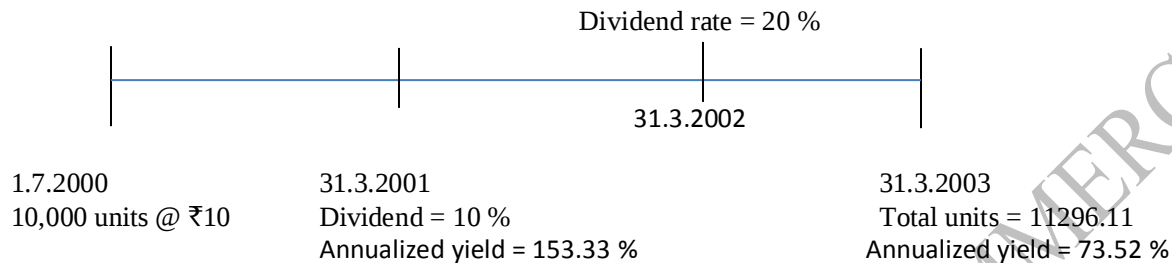
Q. 19 Mr. X on 1.7.2000, during the initial offer of some Mutual Fund invested in 10,000 units having face value of ₹ 10 for each unit. On 31.3.2001 the dividend operated by the M.F. was 10% and Mr. X fund that his

annualized yield was 153.33%. On 31.12.2002, 20% dividend was given. On 31.3.2003 Mr. X redeemed all his balance of 11,296.11 units when his annualized yield was 73.52%. What are the NAVs as on 31.3.2001, 31.12.2002 and 31.3.2003?

[CA – Nov. 06]

[ANSWER – NAV = 20.50; 25.95; 26.75]

Solution:



(a) NAV as on 31.3.2001:

Annualized yield = 153.33 %, so yield for 9 months = $153.33 / 12 * 9 = 115 \%$

Return earned = $1,00,000 * 115 \% = 1,15,000$

Total value of investment = 2,05,000

Dividend paid = 10 % of 1,00,000 = 10,000

NAV = $\frac{2,15,000 - 10,000}{10,000} = 20.50$

(b) NAV as on 31.3.2002:

Closing balance of units:

Opening balance	10,000
Add: additional units issued (10,000 / 20.50)	487.805
	10487.805

Dividend received for the year ended 31.3.2002 = 20 % of (10,487.805 units * 10)

= $1,04,878.05 * 20 \% = 20,975.61$

No. of units issued by the mutual fund for this dividend = $11,296.11 - 10,487.805 = 808.305$

Additional units = $\frac{20,975.61}{NAV}$

$808.305 = \frac{20,975.61}{NAV}$

NAV = $\frac{20,975.61}{808.305} = 25.95$

(c) NAV as on 31.3.2003:

Annualized return = 73.52 %

Total return in % = $\frac{73.52}{12} * 33 = 202.18 \%$

Return earned during holding period = $1,00,000 * 202.18 \% = 2,02,180$

Value of investment = $1,00,000 + 2,02,180 = 3,02,180$

NAV = $\frac{3,02,180}{11,296.11} = 26.75$

Q. 20 A mutual fund that had a net asset value of ₹16 at the beginning of a month, made income and capital gain distribution of ₹0.04 and ₹ 0.03 respectively per unit during the month, and then the month with a net asset value of ₹ 16.08. Calculate monthly and annual rate of return. [CA – June, 09]

[ANSWER – 0.9375 % ; 11.25 %]

Solution:

$$\text{Monthly return} = \frac{(16.08-16)+0.04+0.03}{16} \times 100 = 0.9375 \%$$

$$\text{Annual return} = 0.9375 \times 12 = 11.25 \%$$

Q. 21 Mr. Sinha has invested in three Mutual Fund Schemes as per details below:

	MFA	MFB	MFC
Date of investment	01.12.2008	01.01.2009	01.03.2009
Amount of Investment	₹ 5,00,000	₹ 1,00,000	₹ 50,000
Net asset Value (NAV) at entry date	₹ 10.50	₹ 10	₹ 10
Dividend received up to 31.03.2009	₹ 9,500	₹ 1,500	
NAV as at 31.03.2009	₹ 10.40	₹ 10.10	₹ 9.80

Required:

What is the effective yield on per annum basis in respect of each of the three schemes to Mr. A up to 31.03.2009?
[CA – Nov. 09]

[ANSWER – 2.85 %; 10 %; -24 %]

Solution:

Particulars	MF A	MF B	MF C
Amount of investment	5,00,000	1,00,000	50,000
NAV at entry date	10.50	10	10
Number of units	47,619.048	10,000	5,000
Amount of dividend	₹9500	₹1,500	Nil
Dividend per unit	0.20	0.15	-
NAV at the end	10.40	10.10	9.80

Calculation of HPR:

$$MF_A = \frac{(10.40 - 10.50) + 0.20}{10.50} \times 100 \times \frac{12}{4} = 2.86 \%$$

$$MF_B = \frac{(10.10 - 10) + 0.15}{10} \times 100 \times \frac{12}{3} = 10 \%$$

$$MF_C = \frac{(9.80 - 10) + 0}{10} \times 100 \times \frac{12}{1} = (24 \%)$$

Q.22 The following particulars relates to Gift fund scheme:

Particulars	Value
1. Investment is shares (at cost)	
IT and ITES companies	₹28 crores
Infrastructure companies	₹15 crores
Aviation, Transport and Logistics	₹7 crores
Automotive	₹32 crores
Banking / financial services	₹8 crores
2. Cash and other assets in hand (even throughout the fund period)	₹2 crores
3. Investment in fixed income bearing bonds	
Listed bonds (10,000 10.5 % bonds of Rs. 10,000 each)	₹10 crores
Unlisted bonds	₹8 crores
4. Expenses payable as on closure date	₹3 crores
5. Market expectation on listed bonds	8.40 %
6. No. of units outstanding	5.50 crores

The particulars relating to sectoral index are as under –

Sectors	Index on the date of purchase	Index on the date of valuation
IT and ITES	1750	2950
Infrastructure	1375	2475
Aviation, transportation	1540	2570
Automotive	1760	2860
Banking / financial	1600	2300

Required:

- (a) Net asset value of the fund
 (b) Net asset value per unit
 (c) If the period under consideration is 2 years and the fund has distributed ₹2 per unit per year as cash dividend. Ascertain the net return (annualized).
 (d) Ascertain the expenses ratio, if the fund has incurred the following expenses –

Management and advisory fees	₹275 lakhs
Administration expenses	₹350 lakhs
Publicity and documentation	₹80 lakhs
	₹705 lakhs

[CWA – Study material]

Solution:

- (a) Calculation of net asset value:

Investment in shares:	
IT and ITES $\left(\frac{2,950}{1,750} \times 28 \right)$	47.20
Infrastructure companies $\left(\frac{2,475}{1,375} \times 15 \right)$	27.00
Aviation, Transport and Logistics $\left(\frac{2,570}{1,540} \times 7 \right)$	11.682
Automotive $\left(\frac{2,860}{1,760} \times 32 \right)$	52.00
Banking and financial services $\left(\frac{2,300}{1,600} \times 8 \right)$	11.50
Cash and other assets in hand	2.00
Investment in fixed income bearing bonds $\left(\frac{10 \times 10.5 \%}{8.40\%} \right)$	12.50
Unlisted bonds	8.00
Total assets	171.882
Less: Expenses payable	(3.00)
Net asset value	168.882

(b) NAV per unit = $\frac{\text{Net asset value}}{\text{Number of units}}$
 $= \frac{168.882}{5.50} = ₹30.706$

- (c) Calculation of annualized return:

- (i) Calculation of opening NAV:

Investment in shares:	
IT and ITES companies	28.00
Infrastructure companies	15.00
Aviation, transport	7.00
Automotive	32.00
Banking and financial service	8.00
Cash	2.00

Investment in fixed income bearing bonds:	
Listed bonds	10.00
Unlisted bonds	8.00
	110.00

$$\text{NAV at the beginning} = \frac{110}{5.50} = ₹20$$

$$\text{Amount of cash dividend} = 2 \times 2 = 4$$

$$\text{Return} = \frac{(30.706 - 20) + 4}{20} \times 100 = 73.53\%$$

$$\text{Hence, return per annum} = 73.53 / 2 = 36.765\%$$

$$\begin{aligned} \text{(d) Expenses ratio} &= \frac{\text{Total expenses}}{\text{Average value of portfolio}} \times 100 \\ &= \frac{7.05}{139.441} \times 100 = 5.06\% \end{aligned}$$

$$\text{Average value of portfolio} = \frac{168.882 + 110}{2} = 139.441$$

Q.23 Mr. Sushil has invested in three mutual fund schemes as given below:

Particulars	Scheme A	Scheme B	Scheme C
Date of investment	1.4.2011	1.5.2011	1.7.2011
Amount of investment	₹12,00,000	₹4,00,000	₹2,50,000
Net asset value (NAV) at entry date	₹10.25	₹10.15	₹10
Dividend received up to 31.7.2011	₹23,000	₹6,000	Nil
NAV as at 31.7.2011	₹10.20	₹10.25	₹9.90

You are required to calculate the effective yield on per annum basis in respect of each of the three schemes to Mr. Sushil up to 31.7.2011. take one year = 365 days. Show calculations up to two decimal points.

[SFM – May, 2013]

Q.24 On 1.4.2012 ABC mutual fund issued 20 lakhs units at ₹10 per unit. Relevant initial expenses involved were ₹12 lakhs. It invested the fund so raised in capital market instruments to build a portfolio of ₹185 lakhs. During the month of April 2012 it disposed off some of the instruments costing ₹60 lakhs for ₹63 lakhs and used the proceeds in purchasing securities for ₹56 lakhs. Fund management expenses for the month of April 2012 was ₹8 lakhs of which 10 % was in arrears. In April 2012 the fund earned dividends amounting to ₹2 lakhs and it distributed 80 % of the realized earnings. On 30.4.2012 the market value of the portfolio was ₹198 lakhs. Mr. Akash, an investor, subscribed to 100 units on 1.4.2012 and disposed off the same at closing NAV on 30.4.2012. What was his annual rate of earning?

[SFM – May, 2013]

Solution:

Calculation of closing cash balance:

Particulars	₹ in lakhs
Opening cash balance (200 - 185)	15.00
Initial expenses	(12.00)
Proceeds from sale of securities	63.00
Cost of securities purchased	(56.00)
Fund management expenses paid (8 x 90 %)	(7.20)
Dividend received	2.00
Dividend distributed (2 x 80 %)	(1.60)
Capital gain distributed (63 - 60) x 80 %	(2.40)
Closing cash balance	0.80

Calculation of net asset:

Closing cash balance	0.80
Current market value of portfolio	198.00
	198.80
Arrears of expenses	0.80
Closing net asset	198.00

$$\text{NAV per unit} = \frac{198.00}{20.00} = 9.90$$

$$\text{Earnings per unit} = \frac{2.40 + 1.60}{20} = 0.20$$

$$\text{Rate of return} = \frac{(9.90 - 10) + 0.20}{10} \times 100 = 1\% \text{ per month}$$

$$\text{Annual rate of earnings} = 1 \times 12 = 12\%$$

Q.25 NAV of an open – ended scheme was ₹ 18. The scheme distributed ₹ 0.52 per unit at the end of one year. NAV of the scheme at the end of year was ₹ 20. An investor purchased these units at the beginning of the year and sold them at the end of the year. Determine annual rate of return if:

- (a) It is a no – load scheme.
 (b) If entry and exit load is 2 %.

[ANSWER – (a) 14 %; (b) 9.59 %]

Solution:

(a) No load scheme:

$$\text{HPR} = \frac{0.52 + (20 - 18)}{18} \times 100 = 14\%$$

(b) If entry and exit load is 2 %

$$\text{NAV at the beginning (NAV}_0\text{)} = 18 \times 1.02 = 18.36$$

$$\text{NAV at the end (NAV}_1\text{)} = 20 (1 - 0.02) = 20 \times 0.98 = 19.60$$

$$\text{HPR} = \frac{0.52 + (19.60 - 18.36)}{18.36} \times 100 = 9.59\%$$

Q. 26 In the question no. 25 assume that securities transaction tax (STT) is 0.2 % only on sale / redemption of units. Determine the annual rate of return.

[ANSWER – HPR = (13.78 %; 9.37 %)]

Solution:

(a) No – load scheme:

NAV at the beginning = ₹18

NAV at the end

NAV as given	20
Less: STT on redemption @ 2 %	0.40
Adjusted NAV	19.60

$$\text{HPR} = \frac{0.52 + (19.96 - 18)}{18} \times 100 = 13.78\%$$

(b) If entry and exit load is 2 %

NAV at the beginning = 18 (1 + 0.02) = 18.36

NAV at the end

NAV as given	20
Less: load @ 2 %	0.40
	19.60
Less: STT @ 0.20 %	0.0392
NAV ₁	19.5608

$$\text{HPR} = \frac{0.52 + (19.5608 - 18.36)}{18.36} \times 100 = 9.37 \%$$

Q.27 TUV Ltd has invested in three Mutual Fund Schemes as per the details given below:

	Scheme X	Scheme Y	Scheme Z
Date of investment	1.10.2014	1.1.2015	1.3.2015
Amount of investment (₹)	15,00,000	7,50,000	2,50,000
NAV at entry date	₹12.50	₹36.25	₹27.75
Dividend received up to 31.3.2015	₹45,000	₹12,500	Nil
NAV as at 31.3.2015	₹12.25	₹36.45	₹27.55

What will be the Effective Yield (per annum basis) for each of the above three schemes up to 31st March 2015?
[May, 2015]

Q.28 On 1st April, an open ended scheme of mutual fund had 300 lakhs units outstanding with net asset value (NAV) of ₹18.75. At the end of April, it issued 6 lakhs units at opening NAV plus 2 % load, adjusted for dividend equalization. At the end of May, 3 lakh units were repurchased at opening NAV less 2 % exit load adjusted for dividend equalization. At the end of June, 70 % of its available income was distributed. In respect of April – June quarter, the following additional information are available:

	₹ in lakhs
Portfolio value appreciation	425.47
Income of April	22.950
Income of May	34.425
Income of June	45.450

You are required to calculate:

- Income available for distribution
- Issue price at the end of April
- Repurchase price at the end of May, and
- NAV as on 30th June.

[CA – Nov.2015]

Solution:

Statement showing income available for distribution:

Income for April	22.95
Add: Dividend equalization collected on issue $\left(\frac{22.95}{300} \times 6\right)$	0.459
	23.409
Add: Income earned during May	34.425
	57.834
Less: Dividend equalization paid on re – purchase $\left(\frac{57.834}{306} \times 3\right)$	0.567
	57.267
Add: Income earned during June	45.450

Income available for distribution	102.717
Less: Dividend paid	71.9019
	30.8151

(ii) Issue price at the end of April:

Opening NAV	18.75
Add: Entry Load @ 2 % (18.75 x 2 %)	0.375
Add Dividend equalization $\left(\frac{22.95}{300}\right)$	0.0765
Revised NAV	19.2015

(iii) Re – purchase price at the end of May:

Opening NAV	18.75
Less: Exit load @ 2 %	(0.375)
Add: Dividend equalization paid $\left(\frac{57.834}{306}\right)$	0.189
Revised NAV	18.564

(iv) Statement showing calculation of closing NAV:

Opening net asset (300 x 18.75)	5,625
Add: Appreciation in value	425.47
Issue of units (6 x 19.2015)	115.209
Income earned (22.95 + 34.425 + 45.45)	102.825
Less: Units re – purchased (3 x 18.564)	(55.692)
Income distributed	(71.9091)
Closing net asset value	6,140.9101

Statement showing calculation of closing units:

Opening units	300
Add: New units issued	6
Less: Units re – purchased	(3)
Closing balance	303

$$\text{NAV} = \frac{6,140.9101}{303} = 20.2670$$

Q.29 A mutual fund has a net asset value (NAV) of ₹50 at the beginning of the year. During the year a sum of ₹4 was distributed as income besides ₹3 as capital gains distribution. At the end of the year NAV was ₹55, calculate total return for the year. Suppose the aforesaid mutual fund in the next year gives a dividend of ₹5 as income distribution and no capital gains distribution and NAV at the end of second year is ₹50. What is the return for the second year?

Solution:

NAV at beginning = ₹50

Dividend = ₹4

Capital gain = ₹3

Ending NAV = ₹55

$$\text{Return} = \frac{4+3+(55-50)}{50} \times 100 = 24\%$$

$$\text{Return of II year} = \frac{5+(50-55)}{55} \times 100 = 0\%$$

Q.30 A fund had an NAV of ₹21.50 at the beginning of the year, an investor subscribed to this fund had to pay a load of ₹1.85 per unit. NAV increased to ₹23.04 at the end of the year. During the year dividend and capital gains were distributed to the extent of ₹1.05. What is the total return? Had there been no load what would have been the return?

Solution:

NAV at the beginning = ₹21.50

Entry load = ₹1.85

Hence purchase price = 21.50 + 1.85 = ₹23.35

NAV at the end = ₹23.04

Holding period return = $\frac{1.05 + (23.04 - 23.35)}{23.35} \times 100$

$$\frac{0.74}{23.35} \times 100 = 3.17 \%$$

If there is no load, then HPR = $\frac{1.05 + (23.04 - 21.50)}{21.50} \times 100$

$$\frac{2.59}{21.50} \times 100 = 12.05 \%$$

Q.31 In case of an open – ended mutual fund scheme the market price was ₹21. A dividend of ₹4 has just been paid and ex – dividend price now is ₹23. What return has been earned over the past year?

Solution:

$$\text{Return} = \frac{4 + (23 - 21)}{21} \times 100$$

$$= \frac{6}{21} \times 100 = 28.57 \%$$

Q.32 Mr. V purchased a 3 – year closed ended fund of Tata when the fund was launched, at an opening offer price of ₹10 per unit. Since then the units got listed on the stock exchange. After a year the NAV of the fund was ₹12.50. However, the units of the fund were trading at a discount of 25 %. During the year a dividend of 5 % was given. If Mr. V sells the units in the exchange, would he have earned any return at all?

Solution: Opening NAV = ₹10

Closing NAV = 12.50 * 75 % = ₹9.375

Dividend = 10 * 5 % = 0.50

$$\text{HPR} = \frac{0.50 + (9.375 - 10)}{10} \times 100$$

$$\frac{-0.125}{10} \times 100 = -1.25 \%$$

Therefore Mr. Y would not earn any return

Q.33 A mutual fund purchased 10,000 Debentures of a company on June 1, 2009 for 10.7 lakhs and further 5,000 debentures on November 1, 2009 for ₹ 5.45 lakhs. The debentures carry fixed annual coupon of 12 %, payable on every 31st March and 30th September. On February 28, 2010 the fund sold 6,000 of these debentures for ₹ 6.78 lakhs. Nominal value per debenture is ₹ 100. Show investment in Debentures a/c in the books of fund.
[Study material]

SOLUTION:

Investment in Debenture a/c

Date	Particulars	Nominal value	Interest	Cost	Date	Particulars	Nominal value	Interest	Cost
1.6.09	To Bank	10	0.20	10.50	30.9.09	By Bank	-	0.60	-
1.11.09	To Bank	5	0.05	5.40	28.2.10	By Bank	6	0.30	6.48

28.2.10	To P & L	-	-	0.12	31.3.10	By Bank	-	0.54	-
31.3.10	To P & L		1.19		31.3.10	By Balance c/d	9	-	9.54
		15	1.44	16.02			15	1.44	16.02

Working notes:

(i) Statement showing calculation of interest on various dates:

Date	Particulars	Face value	Period	Rate of interest	Amount of interest
1.6.2009	Purchases	10,00,000	2 months	12 %	20,000
30.9.2009	Due date	10,00,000	6 months	12 %	60,000
1.11.2009	Purchases	5,00,000	1 month	12 %	5,000
28.2.2010	Sale	6,00,000	5 months	12 %	30,000
31.3.2010	Due date	9,00,000	6 months	12 %	54,000

(ii) Calculation of profit / loss on sale on 28.2.2010:

Sale value (6,78,000 – 30,000)	6,48,000
Less: Cost of investment sold $\frac{10,50,000+5,40,000}{15,00,000} \times 6,00,000$	6,36,000
Profit on sale	12,000

(iii) Calculation of cost of investment purchased:

(a) Cost of debentures purchased on 1.6.2009	
Purchase cost	10,70,000
Less: Accrued interest	20,000
Cost	10,50,000
(b) Cost of debentures purchased on 1.11.2009	
Purchase cost	5,45,000
Less: Accrued interest	5,000
Cost	5,40,000

Q. 34 A mutual fund purchased 20,000 Debentures of X Ltd. on June 1, 2011 for ₹ 21.4 lakhs and further 10,000 debentures on November 1, 2011 for ₹10.9 lakhs. The debentures carry fixed annual coupon of 12 %, payable on every 31st March and 30th September. On February 29, 2012 the fund sold 12,000 of these debentures for ₹13.56 lakhs. Nominal value per debenture is ₹100. Show investment in Debentures a/c in the books of mutual fund.

SOLUTION:

Investment in debentures a/c

Date	Particulars	Nominal value	Interest	Cost	Date	Particulars	Nominal value	Interest	Cost
1.6.2011	To Bank	20	0.40	21	30.9.11	By Bank	-	1.20	-
1.11.11	To Bank	10	0.10	10.80	29.2.12	By Bank	12	0.60	12.96
29.2.12	To Revenue	-	-	0.24	31.3.12	By Bank	-	1.08	-
31.3.12	To revenue	-	2.38	-	31.3.12	By Balance c/d	18	-	19.08
		30	2.88	32.04			30	2.88	32.04

Working note:

(i) Calculation of profit / loss on sale of investment:

Sale value	12,96,000
Less: Cost of investment sold $\frac{21+10.80}{30} \times 12$	12,72,000

Profit on sale of investment

24,000

Q. 35 The investment portfolio for a mutual fund scheme includes 10,000 shares of A Ltd. and 8,000 shares of B Ltd. acquired on 30.10.2009. The cost of A Ltd. shares is ₹20 while that of B Ltd. shares is ₹30. The market values of these shares at the end of 2009 – 2010 were ₹19 and ₹32 respectively. On 31.5.2010 shares of both of the companies were disposed off realizing ₹18.50 per A Ltd. shares and ₹33.50 per B Ltd. shares. Show important accounting entries in the books of fund in the accounting year 2010 – 2011.

[Study Material]

Solution:

Journal entries

Date	Particulars		Debit (₹)	Credit (₹)
30.10.09	Investment in A Limited a/c (10,000 * 20)	Dr.	2,00,000	
	Investment in B Limited a/c (8,000 * 30)	Dr.	2,40,000	
	To Bank a/c			4,40,000
31.3.2010	Revenue a/c	Dr.	10,000	
	To Investment in A Limited a/c			10,000
	[10,000 * (20 - 19)]			
	Investment in B Limited a/c	Dr.	16,000	
	To Unrealized appreciation reserve a/c			16,000
	[8,000 * (32 - 30)]			
31.5.2010	Bank a/c	Dr.	1,85,000	
	Loss on sale a/c	Dr.	5,000	
	To Investment in A Limited			1,90,000
	Bank a/c	Dr.	2,68,000	
	To Investment in B Limited			2,56,000
	To Profit on sale			12,000
31.3.2011	Revenue a/c	Dr.	5,000	
	To Loss on sale a/c			5,000
31.3.2011	Profit on sale a/c	Dr.	12,000	
	Unrealized appreciation reserve a/c	Dr.	40,000	
	To Revenue a/c			52,000

Q. 36 The investment portfolio for a mutual fund scheme includes 2,00,000 shares of Yati Ltd. and 1,60,000 shares of Dishita Ltd. acquired on 1.4.2011. The cost of Yati Ltd. shares is ₹20 while that of Dishita Ltd. shares is ₹30. The market values of these shares at 31st March were ₹19 and ₹32 respectively. On 31.5.2012 shares of both the companies were disposed off realizing ₹18.50 per Yati Ltd. shares and ₹33.50 per Dishita Ltd. shares. Show important accounting entries in the books of fund in the accounting year 2011 – 2012.

Solution:

Journal entries

1.4.2011	Investment in Yati Limited a/c (2 * 20)	Dr.	40	
	Investment in Dishita Limited a/c (1.60 * 30)	Dr.	48	
	To Bank a/c			88
31.3.12	Revenue a/c	Dr.	2	

	To Investment in Yati Limited			2
	Investment in Dishita Limited a/c	Dr.	3.20	
	To Unrealized appreciation reserve a/c			3.20
31.5.12	Bank a/c	Dr.	37	
	Loss on sale a/c	Dr.	1	
	To Investment in Yati Limited a/c			38
	Bank a/c	Dr.	53.60	
	To Investment in Dishita Limited a/c			51.20
	To profit on sale a/c			2.40
31.3.13	Revenue a/c	Dr.	1	
	To Loss on sale			1
	Profit on sale a/c	Dr.	2.40	
	Unrealized appreciation reserve a/c	Dr.	3.20	
	To Revenue a/c			5.60

Q. 37 On April 1, 2009 a mutual fund scheme had 9 lakhs units of face value of ₹10 outstanding. The scheme earned ₹81 lakhs in 2009 – 2010, out of which ₹45 lakhs was earned in first half year. 1 lakh units were sold on 30.9.09 at NAV ₹60. Show important accounting entries for sale of units and distribution of dividend at the end of 2009 – 10.
[Study material / Nov. 2011]

Solution:

Journal entries

(i)	Bank a/c	Dr.	65	
	To Unit capital a/c			10
	To Dividend equalisation a/c			5
	To Reserve a/c			50
(ii)	Dividend equalisation a/c	Dr.	5	
	To Revenue a/c			5
(iii)	Revenue a/c	Dr.	86	
	To Bank a/c			86

Working notes:

(i) Calculation of payment of dividend equalisation

$$\text{Dividend equalisation per unit} = \frac{\text{income earned by mutual fund before issuing new units}}{\text{Number of old units}}$$

$$= \frac{45}{9} = 5 \text{ per unit}$$

(ii) Statement showing calculation of amount available for distribution:

Particulars	Old	New	Total
Earnings of first 6 months	45	-	45
Earnings of next 6 months	32.40	3.60	36
			81
Add: payment received as dividend equalisation			5
Amount available for distribution			86

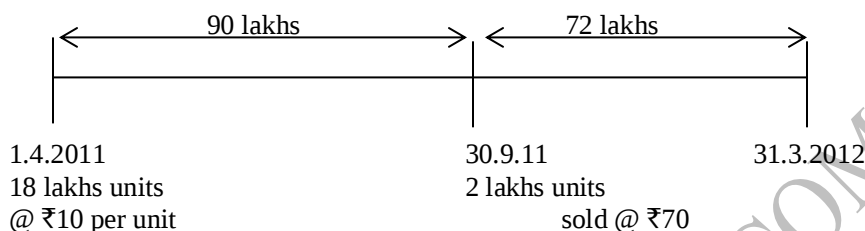
(iii) Statement showing allocation of earnings:

Particulars	Old	New
-------------	-----	-----

Distribution of profit (86 /10)	8.60	8.60
Less: Amount already paid as dividend equalisation	-	5.00
Allocation of earnings	8.60	3.60

Q. 38 On 1.4.2011, a mutual fund scheme had 18 lakh units of face value of ₹10 each was outstanding. The scheme earned ₹162 lakhs in 2011 – 12, out of which ₹90 lakhs was earned in the first half year of the year. On 30.9.2011, 2 lakh units were sold at a NAV of ₹70. Pass journal entries for sale of units and distribution of dividend at the end of 2011 – 2012. [CA – June, 2009]

Solution:



Calculation of dividend equalisation payment:

$$\text{Dividend equalisation per unit} = \frac{\text{income earned by mutual fund before issuing new units}}{\text{Number of old units}}$$

$$= \frac{90,00,000}{18,00,000} = ₹5 \text{ per unit}$$

Statement showing calculation of total earnings of mutual fund:

Earnings earned by mutual fund during 2011 – 12	162
Add: Dividend equalisation payment received (2 *5)	10
Total earnings available for distribution	172

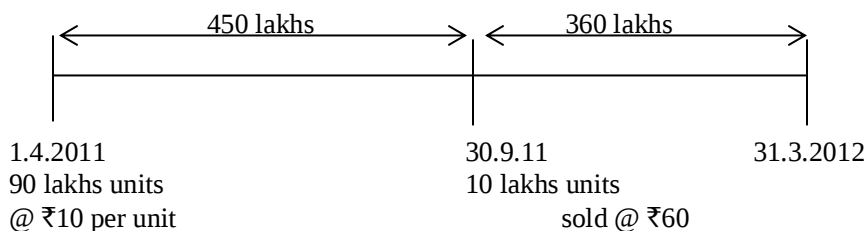
Statement showing distribution of earnings between unitholders:

Particulars	Old unit holders	New unit holders
Earnings distributed by mutual fund (172 /20)	8.60	8.60
Less: Amount already recovered by mutual fund	-	5.00
Earnings distributed per unit	8.60	3.60

Journal entries

(i)	Bank a/c	Dr.	150	
	To Unit capital a/c			20
	To Dividend equalisation a/c			10
	To Reserves a/c			120
(ii)	Dividend equalisation a/c	Dr.	10	
	To Revenue a/c			10
(iii)	Revenue a/c	Dr.	172	
	To Bank a/c			172

Q. 39 On April 1, 2011 a mutual fund scheme had 90 lakhs units of face value of ₹10 outstanding. The scheme earned ₹810 lakhs in 2011 – 2012, out of which ₹450 lakhs was earned in the first half – year. 10 lakh units were sold on 30.9.2011 at NAV ₹60. Show important accounting entries for sale of units and distribution at the end of 2011 – 2012.

Solution:

Calculation of dividend equalisation payment:

$$\text{Dividend equalisation per unit} = \frac{\text{income earned by mutual fund before issuing new units}}{\text{Number of old units}}$$

$$= \frac{450}{90} = ₹5 \text{ per unit}$$

Statement showing calculation of total earnings of mutual fund:

Earnings for the year 2011 – 12	810
Add: Dividend equalisation payment received (5 * 10)	50
Total earnings available for distribution	860

Statement showing distribution of earnings:

Particulars	Old unit holders	New unit holders
Earnings distributed by mutual fund (860 / 100)	8.60	8.60
Less: Amount already recovered by mutual fund	-	5.00
Earnings distributed per unit	8.60	3.60

Journal entries

(i)	Bank a/c	Dr.	650	
	To Unit capital a/c			100
	To Dividend equalisation a/c			50
	To Reserves a/c			500
(ii)	Dividend equalisation a/c	Dr.	50	
	To Revenue a/c			50
(iii)	Revenue a/c	Dr.	860	
	To Bank a/c			860

Q.40 Investors mutual fund is registered with SEBI and having its registered office at Pune. The fund is in the process of finalising the annual statement of accounts of one of its open ended mutual funds schemes. From the information furnished below you are required to prepare a statement showing the movement of unit holders' fund for the financial year ended 31st March, 2012.

Particulars	₹ '000
Opening balance of Net assets	12,00,000
Net income for the year (audited)	85,000
8,50,200 units issued during 2011 – 2012	96,500
7,52,300 units redeemed during 2011 – 2012	71,320
Face value per unit is ₹100	

[CA – Nov. 2009]

Solution:

Statement showing movement of unit holder's fund:

(₹ in 000)

Opening balance of net asset	12,00,000
Add: Par value of units sold (8,50,200 * 100)	85,020

Add: Net income for the year	85,000
Add: Transfer from reserves	15,390
Less: par value of units redeemed (7,52,300 * 100)	(75,230)
Closing balance	13,10,180

Working note:

Calculation of amount of reserve:

(A) On units sold:		
Sale value	96,500	
Less: Par value of units sold	85,020	11,480
(B) On units redeemed:		
Redemption value	71,320	
Less: Par value of units redeemed	75,230	3,910
Balance in reserve		15,390

Q.41 A mutual fund provides the following information for the year 2012 – 2013:

(i) 90 lakh units issued @ par value of ₹10.

(ii) 10 lakh units sold @ ₹60

(iii) Net income for the year ₹ 810 lakhs.

(iv) 4 lakh units repurchased / redeemed @ ₹55.

Prepare statement showing the movement of unit holder's funds and movement in unit capital.

Solution:

Statement showing movement in unit capital:

Particulars	No. of units (lakhs)	₹ in lakhs
Opening balance as on 1.4.2012	90	900
Units sold during the year	10	100
Units repurchased during the year	(4)	(40)
Closing balance as on 31.3.2013	96	960

Statement showing movement of unit holder's fund:

Particulars	₹ in lakhs
Opening balance of net asset (90 * 10)	900
Add: Par value of units sold (10 * 10)	100
Add: Net income for the year	810
Add: Transfer from reserve	320
Less: Par value of units redeemed (4 * 10)	(40)
Closing balance of net asset	2,090

Working note:

Calculation of amount transfer from reserve:

(a) On units sold:		
Sale value (10 * 60)	600	
Less: Par value of units sold	100	500
(b) On repurchase of units:		
Redemption value (4 * 55)	220	
Less: Par value of units redeemed (4 * 10)	40	(180)
Balance in reserve		320

Q.42 A mutual fund had the following transactions in respect of its investments in D Ltd's shares:

Date	Particulars	Amount (in '000)
1.4.08	Purchased 1,000 shares	56
8.4.2008	200 bonus shares were allotted	-
16.5.2008	Purchased 800 shares	42
1.6.08	Sold 1,500 shares	75

Market price of D Ltd. Shares on 31.3.09 was ₹51. Show investment in D Ltd. Shares account in books of the fund.

Solution:

Investment in share a/c

Date	Particulars	Nominal value	Income	Cost	Date	Particulars	Nominal value	Income	Cost
1.4.08	To Bank	50,000	-	56,000	1.6.08	By Bank	75,000		75,000
8.4.08	To Bonus	10,000	-	-		By Balance c/d	25,000		25,500
16.5.08	To Bank	40,000		42,000					
	To unrealized appreciation reserve	-	-	1,000					

Working note:

(i) Calculation of average cost:

Opening balance	1,000	56,000
Bonus shares	200	-
Purchases	800	42,000
	2,000	98,000

$$\text{Average cost per share} = \frac{98,000}{2,000} = 49$$

(ii) Calculation of profit / loss on sale:

Sale value	75,000
Less: Cost of investment sold (1,500 * 49)	73,500
Profit on sale	1,500

Q. 43 Calculate the year – end NAV of the mutual fund scheme on the basis of the information given below:

- UTI launched a new fund scheme for ₹6,000 crores.
- Underwriting commission is 1 % of the fund shared equally by SBI, PNB, Syndicated bank and UTI bank.
- The fund was launched on 1.4.2012 with a face value of ₹1,000 per unit.
- Underwriting commission was paid in full.
- Management expenses was allowed by SEBI @ 1 % of the fund raised. However, during the year management expenses was of ₹45 crore only. The management decided to defer the payment of ₹5 crore to the next financial year.
- On 1.5.2012, the total fund received was invested after deduction of underwriting commission and ₹100 crore to meet the day to day management expenses. The investment fund received yielding 10 % interest per annum. The interest was received for 3 quarters and the interest of last quarter is yet to receive. The interest realized in cash has been distributed to the unit holders @ 80 %. The financial year runs from April to March. The quarter starts from the date of investment i.e. 1.5.2012.

[RTP – Accounts, Nov. 2013]

Solution:

Calculation of closing cash balance:

Amount received from sale of units	6,000
------------------------------------	-------

Less: Investment made (6,000 – 100 - 60)	(5,840)
Underwriting commission	(60)
Management expenses (45 - 5)	(40)
Add: Interest received (5,840 * 10 % * 9/12)	438
Less: Interest distributed (438 * 80 %)	(350.40)
Closing cash balance	147.60

Statement of net asset:

Value of investment	5,840
Closing cash balance	147.60
Accrued interest	97.33
	6,084.93
Less: Outstanding expenses	(5.00)
Net asset	6,079.93

$$\text{NAV} = \frac{\text{Net asset value}}{\text{Total no. of units}} = \frac{6,079.93}{6} = 1,013.32$$

Q.44 Mr. A has invested in three mutual fund schemes as per the details given below:

Particulars	MF 'A'	MF 'B'	MF 'C'
Date of investment	1.11.2015	1.2.2016	1.3.2016
Amount of investment (₹)	1,00,000	2,00,000	2,00,000
NAV at entry date (₹)	10.30	10.00	10.10
Dividend received up to 31.3.2016 (₹)	2,850	4,500	Nil
NAV as on 31.3.2016 (₹)	10.25	10.15	10.00

Assume 1 year = 365 days. Show the amount of rupees up to two decimal points. You are required to find out the effective yield (up to three decimal points) on per annum basis in respect of each of the above three mutual fund schemes up to 31.3.2016. [SFM – Nov. 2016]

Q.45 On 1st April, 2016, Good return mutual fund has the following assets and prices at 3.00 PM

Shares of	Number of shares	Market price per share
A Limited	10,000	18.50
B Limited	35,000	384.40
C Limited	10,000	263.60
D Limited	75,000	575.60
E Limited	20,000	27.65
Number of units of fund = 5,00,000 units		

(a) Calculate the Net asset value (NAV) of the fund.

(b) Assuming Mr. Suresh, send a cheque of ₹75,00,000 to the fund on 1st April, 2016 and the fund manager purchases 15,000 shares of C Limited and balance is held in bank, what will be the new position of the fund?

(c) Calculate the new net asset value (NAV) of the fund, if on 2nd April, 2016 at 3.00 PM, the market price of shares is as follows:

Shares of	Rate per share (in ₹)
A Limited	21.30
B Limited	417.00
C Limited	289.80
D Limited	512.20
E Limited	35.00

[CA – May, 2016]

Q.46 Calculate the today's NAV of Flexi Fund if the following details are given:

Yesterday's NAV = ₹12.87, Total number of outstanding units – 1.25 crores, Face value – ₹10, Expenses – ₹1,00,000 (Assume sales NAV and Repurchase NAV to be ₹12.87)

Appreciation of portfolio today	₹12 lakhs
Units – Fresh subscription	2 lakhs
Units – Redemption	0.75 lakhs
Dividends received	₹1 lakh

Q.47 Calculate the today's NAV of multi fund if the following details are given:

Yesterday's NAV = ₹10.75; Total number of outstanding units – 250 crores; Face value – ₹10; Expenses – ₹22 crores. (Assume sales NAV and repurchase NAV to be ₹10.75)

Depreciation of portfolio today	₹ 12 crores
Units – redemption	1 crore
Unrealized gain	₹ 14 crores
Unrealized loss	₹ 8 crores

“GUIDANCE NOTE ON ACCOUNTING TREATMENT FOR EXCISE DUTY”

- (1) This guidance note recommends accounting treatment for excise duty in respect of excisable goods produced or manufactured by an enterprise.
- (2) Excise duty is a duty on manufacture or production of excisable goods in India.
- (3) As the excise law, factory where manufacturing activity is carried out must be registered with excise authorities.
- (4) Section 3 of Central Excise act provides that excise duty is a duty on production but excise duty shall be collected at the time of removal of goods from factory premises or from approved place of storage.
- (5) Excise duty is leviable not only on those goods which are manufactured or produced for sale but it is also leviable on excisable goods manufactured or produced in a factory for internal consumption. Goods manufactured for internal consumption is known as captive consumption.
- (6) Whenever goods are removed from factory to a storage house which is approved by excise authorities, then no excise duty is payable by an enterprise. Such approved storage houses are known as “BONDEN WAREHOUSE”. In such case, excise duty is collected at the time of clearance of goods from such “BONDED WAREHOUSES”.
- (7) Excise duty is a direct expense on production, hence should be considered for valuation of inventories.
- (8) Since excise duty is levied on production and collection time may differ from production hence it is necessary to create provision for unpaid excise duty in books of accounts on manufacturing of excisable goods.
- (9) Arguments in respect of creation of provision for unpaid excise duty:
(A) Arguments in favour:
 - (a) Liability for excise duty arises at the time of manufacturing and only its collection can be deferred.
 - (b) Failure to provide liability will result in Balance – sheet not showing a true and fair view.**(B) Arguments in against:**
 - (a) Excise duty gets quantified only when goods are cleared.
 - (b) Actual liability may get modified by the time when goods are removed.
 - (c) Where goods are damaged or destroyed before clearance, excise duty may be waived by authority.
 - (d) Failure to provide liability does not affect the profits or losses.
- (10) Excise duty is always calculated at specified rate which are in force on the date of removal, not on the date of manufacture.
- (11) Excise duty cannot be treated as a period cost.
- (12) Whenever goods are meant for export, excise duty may not provide for, even though the manufacture thereof is completed.
- (13) If the method of accounting for excise duty is not in accordance with the principals explained in this guidance note, the auditor should qualify his report.

(14) Closing stock can be valued on FIFO or weighted average basis. If question is silent, then use weighted average method for valuation of stock.

“GUIDANCE NOTE ON ACCOUNTING TREATMENT OF CENVAT”

(15) Duty paid on inputs may be debited to a separate account called CENVAT credit receivable input account which is used to set – off against the payment of excise duty on the final products.

(16) Purchase cost should be debited net of specified duty on inputs.

(17) Debit balance in CENVAT credit receivable input account should be shown on the assets side under the heading current assets.

(18) Since CENVAT credit can be considered is of the nature of a refundable tax. Therefore, CENVAT credit should be reduced from the purchase cost of capital goods.

(19) CENVAT credit in respect of capital goods is allowed for an amount not exceeding 50 % of the duty paid on such capital goods in the financial year in which the goods are received in factory and the balance will be allowed in the subsequent years.

(20) Accounting entries in the books of entity:

1.	Entry of purchase or Input/ Raw material:			
	Purchase a/c (Purchase price)	DR.	xxx	
	CENVAT credit receivable input a/c	DR.	xxx	
	To Creditors a/c / Bank a/c			xxx
	(Being goods purchased)			
2.	Purchase of capital goods:			
	Capital goods a/c	DR.	xxx	
	CENVAT credit receivable capital goods a/c	DR.	xxx	
	CENVAT credit receivable deferred capital goods a/c	DR.	xxx	
	To Creditors for capital asset/ Bank a/c			xxx
	(Being capital goods purchased)			
3.	On Manufacturing / Production of goods:			
	Excise duty a/c	DR.	xxx	
	To Provision for unpaid excise duty a/c			xxx
	(Being duty charged on production)			
4.	Entry on removal of goods:			
	Provision for unpaid excise duty a/c	DR.	xxx	
	To Excise duty payable a/c			xxx
5.	Entry for payment of excise duty:			
	Excise duty payable a/c	DR.	xxx	
	To CENVAT credit receivable input a/c			xxx
	To CENVAT credit receivable capital goods a/c			xxx
	To Bank a/c			xxx

	(Being excise duty settled)			
6.	Entry for sale of goods:			
	Debtors / Bank a/c (With excise duty)	DR.	xxx	
	To sales			xxx
	(Being goods sold)			

Note: AS per accounting standard – 9 In Profit and loss account sales should be reported as follows:

Sales	xxx
Less: Excise duty	(xxx)
	xxx

(21) Preparation of trading account:

Trading a/c

Particulars	₹	Particulars	₹
To opening stock (without duty)	xxx	By Sales	xxx
To Purchases (without duty)	xxx	Less: Contra	(xxx) xxx
To labour	xxx		
To Direct expenses	xxx	By Closing stock	xxx
To Excise duty	xxx		
Less: Contra	(xxx) xxx		
To Gross profit	xxx		
	xxx		xxx

(22) Valuation of inventory: Weighted average method

Material cost (Production units / material consumption * units of FG) * rate	xxx
Labour cost	xxx
Direct expenses	xxx
Excise duty	xxx
Value of closing stock of finished goods	xxx

(23) Preparation of necessary ledger accounts:

(i) CENVAT credit receivable input a/c

Particulars	₹	Particulars	₹
To Balance b/d (CCRI * opening stock)	Xxx	By Excise duty payable	xxx
To creditors (CCRI * units purchased)	Xxx		

(ii) Excise duty payable a/c

Particulars	₹	Particulars	₹
To CCRI a/c	xxx	By Provision for unpaid ED	xxx
To Bank a/c	xxx		
	xxx		xxx

(iii) Provision for excise duty a/c

Particulars	₹	Particulars	₹
-------------	---	-------------	---

To ED payable a/c	xxx	By Excise duty a/c	xxx
To Balance c/d	xxx		
	xxx		xxx

(iv) Excise duty a/c

Particulars	₹	Particulars	₹
To Provision for unpaid ED	xxx	By Trading a/c	xxx
			xxx

(24) Calculation of working capital requirement:

Particulars	₹
(A) Current assets:	
Inventory:	
Raw material	xxx
Finished goods	xxx
Debtors	xxx
Bank	xxx
CCRI	xxx
Total CA (A)	xxx
(B) Current liabilities	
Creditors	xxx
Other current liabilities	xxx
Total CL (B)	xxx
Working capital (A - B)	xxx

(25) Accounting treatment where capital goods are acquired on operating lease:

(A) Books of Lessor:

- Where financing arrangement also covers the specified duty on capital goods, the asset given on lease should be shown at purchase cost net of duty.
- Specified duty on capital goods which would be availed of as CENVAT credit by the lessee, should be recovered and disclosed separately as duty recoverable from lessee.
- In other words "Minimum lease payments" does not include duties.
- If specified duty on capital goods does not form part of financing arrangement and lessee has to pay duty directly to the supplier, the same need not be recorded in the books of lessor.

(B) Books of Lessee:

- In the books of lessee CENVAT credit receivable on capital goods acquired on leased asset should be treated in usual manner, except that the cost of the relevant asset and depreciation is not accounted in the books of lessee.

(26) Accounting treatment where capital goods are acquired on Hire purchase / Finance lease

(A) Books of hire vendor:

- When the hire purchase arrangement covers the excise duty on the asset, then the hire vendor should record the sale of asset inclusive of the excise duty.
- When the hire purchase arrangement does not cover the excise duty on the asset, the hirer will pay the duty separately to the supplier of the asset. The hire vendor will not record it in his books.

(B) Books of hire purchaser:

- Same as accounting for outright purchases.

QUESTION BANK

Q.1 HSL Limited is manufacturing goods for local sale and exports. As on 31st March 2010, it has the following finished stock in the factory warehouse:

Goods meant for local sales ₹100 lakhs (cost ₹75 lakhs)

Goods meant for exports ₹50 lakhs (cost ₹20 lakhs)

Excise duty is payable at the rate of 12 %. The company's managing director says that excise duty is payable only on clearance of goods and hence not a cost. Please advice HSL using guidance note, if any issued on this, including valuation of stock.

[CA – May, 2003/ May, 2011]

Q. 2 Journalized and prepare trading account:

(i) Purchased 10,000 units of raw material @ ₹25 per unit (with ED ₹2 per unit)

(ii) Purchased one machine for ₹1,00,000 (with excise duty of ₹8,000)

(iii) Paid wages ₹50,000

(iv) Produced 9,000 units (consumed 10,000 units of raw material)

(v) Removed 9,000 units

(vi) Sold 9,000 units @ ₹60 per unit (ED include ₹6 per unit)

(vii) Duty was paid on due date.

SOLUTION:

Journal entries

	Particulars		Debit	Credit
(i)	Purchase a/c (10,000 * 23)	Dr.	2,30,000	
	Cenvat credit receivable input a/c	Dr.	20,000	
	To Creditors a/c			2,50,000
(ii)	Machinery a/c	Dr.	92,000	
	Cenvat credit receivable (capital goods)	Dr.	4,000	
	Cenvat credit receivable (deferred capital goods)	Dr.	4,000	
	To Creditors for machine a/c			1,00,000
(iii)	Wages a/c	Dr.	50,000	
	To Bank a/c			50,000
(iv)	Excise duty a/c	Dr.	54,000	
	To Provision for unpaid excise duty			54,000
(v)	Provision for unpaid excise duty a/c	Dr.	54,000	
	To Excise duty payable a/c			54,000
(vi)	Excise duty payable a/c	Dr.	54,000	
	To Cenvat credit receivable input a/c			20,000
	To Cenvat credit receivable (capital goods) a/c			4,000
	To Bank a/c			30,000
(vii)	Debtors a/c (9,000 * 60)	Dr.	5,40,000	
	To Sales a/c			5,40,000

Trading a/c

Particulars	Amount	Particulars	Amount
To Opening stock	-	By Sales	5,40,000
To Raw material consumption	2,30,000	Less: Excise duty	54,000
			4,86,000

To Wages	50,000		
To Excise duty	54,000		
Less: Contra	54,000	-	
To Gross profit c/d	2,06,000		
	4,86,000		4,86,000

Q. 3 Prepare necessary ledger accounts from the following details:

- (i) Opening stock of raw material = 10,000 units @ ₹115 (ED ₹12 per unit)
- (ii) Purchases 5,00,000 units @ ₹126 (ED ₹13 per unit)
- (iii) Labour = ₹25 per unit consumed.
- (iv) Production units = 4,11,000 units
- (v) Consumed units of raw material: 4,30,000
- (vi) Removal = 3,70,000 (out of which 15,000 units to bonded warehouse)
- (vii) Sales = 3,20,000 units @ ₹220 (ED ₹27 per unit)
- (viii) Apply weighted average method for stock.

Solution:

Journal entries

(i)	Purchases a/c	Dr.	5,65,00,000	
	CCRI a/c	Dr.	65,00,000	
	To Creditors / Bank a/c			6,30,00,000
(ii)	Wages a/c	Dr.	1,07,50,000	
	To Bank a/c			1,07,50,000
(iii)	Excise duty a/c	Dr.	1,10,97,000	
	To Provision for unpaid excise duty a/c			1,10,97,000
(iv)	Provision for unpaid excise duty a/c	Dr.	95,85,000	
	To ED payable a/c			95,85,000
	(3,55,000 * 27)			
(v)	Excise duty payable a/c	Dr.	95,85,000	
	To CCRI a/c			66,20,000
	To Bank a/c			29,65,000
(vi)	Debtors a/c	Dr.	7,04,00,000	
	To Sales a/c			7,04,00,000

Cenvat credit receivable input a/c

Particulars	₹	Particulars	₹
To Balance b/d	1,20,000	By Excise duty payable account	66,20,000
To Bank a/c	65,00,000		
	66,20,000		66,20,000

Excise duty payable a/c

Particulars	₹	Particulars	₹
To CCRI a/c	66,20,000	By Provision for unpaid ED	95,85,000
To Bank a/c	29,65,000		
	95,85,000		95,85,000

Provision for unpaid excise duty a/c

Particulars	₹	Particulars	₹
-------------	---	-------------	---

To ED Payable a/c	95,85,000	By Excise duty a/c	1,10,97,000
To Balance c/d	15,12,000		
	1,10,97,000		1,10,97,000

Excise duty a/c

Particulars	₹	Particulars	₹
To Provision for excise duty	1,10,97,000	By Trading a/c	1,10,97,000
	1,10,97,000		1,10,97,000

Trading a/c

Particulars	₹	Particulars	₹
To Opening stock	Nil	By Sales	7,04,00,000
To Consumption of raw material	4,85,06,000	Less: Contra	(86,40,000)
To Labour (4,30,000 x 25)	1,07,50,000	By Closing stock	1,55,76,525
To excise duty	1,10,97,000		
Less: Contra	(86,40,000)		
To Gross profit	1,56,23,525		

Working notes:

Consumption of raw material:

Opening stock (10,000 x 103)	10,30,000
Add: Purchase (5,00,000 x 113)	5,65,00,000
Less: Closing stock (80,000 x 112.80)	90,24,000
Consumption	4,85,06,000

$$\text{Weighted average rate} = \frac{10,30,000 + 5,65,00,000}{5,10,000} = 112.80$$

Calculation of value of finished goods stock:

Units of closing stock = 4,11,000 – 3,20,000 = 91,000 units

Material cost $\left(\frac{4,30,000}{4,11,000} \times 91,000 \right) \times 112.80$	1,07,39,350
Labour cost (95,207 x 25)	23,80,175
Excise duty (91,000 x 27)	24,57,000
Value of closing stock	1,55,76,525

Q. 4 A Ltd. provide following information:

- (i) Purchase 20,000 Kg. of raw material @ ₹100 per Kg. including excise duty ₹10.
 - (ii) Purchased capital goods for ₹10,00,000 excluding excise duty ₹50,000.
 - (iii) Production 17,000 Kg. of output.
 - (iv) Closing stock of raw material = 1,500 Kg.
 - (v) Removal = 15,000 Kg.
 - (vi) Sales 12,000 Kg. @ ₹250 including excise duty ₹25.
 - (vii) Labour cost = ₹20 per Kg. produced.
 - (viii) Apply weighted average method for valuation of stock.
- Pass journal entries, prepare trading account and extract of balance – sheet.

Solution:

Journal entries

S. No.	Particulars		Debit	Credit
1.	Purchases a/c (20,000 x 90)	Dr.	18,00,000	
	CCRI a/c (20,000 x 10)	Dr.	2,00,000	
	To Creditors a/c			20,00,000
	(Being raw material/ goods purchased)			
2.	Machinery a/c	Dr.	10,00,000	
	Cenvat credit receivable capital goods (CCRCG) a/c	Dr.	25,000	
	Cenvat credit receivable deferred capital goods a/c	Dr.	25,000	
	To Creditors for machinery a/c			10,50,000
	(Being capital goods purchased)			
3.	Excise duty a/c (17,000 x 25)	Dr.	4,25,000	
	To Provision for excise duty a/c			4,25,000
	(Being excise duty charged on production)			
4.	Provision for excise duty a/c	Dr.	4,25,000	
	To Excise duty payable a/c			4,25,000
	(Being provision transferred to payable account on removal of goods)			
5.	Debtors a/c	Dr.	30,00,000	
	To Sales a/c			30,00,000
	(Being goods sold)			
6.	Direct labour a/c	Dr.	3,40,000	
	To Bank a/c			3,40,000
	(Being labour expenses paid)			
7.	Excise duty payable a/c	Dr.	3,75,000	
	To CCRI a/c			2,00,000
	To CCRCG a/c			25,000
	To Bank a/c			1,50,000
	(Being excise duty paid after availing cenvat credit)			

Trading account

Particulars	₹	Particulars	₹
To Opening stock	-	By sales	30,00,000
To Consumption of raw material	16,65,000	Less: Contra	(3,00,000)
To Labour	3,40,000	By Closing stock	7,14,706
To excise duty	4,25,000		
Less: Contra	(3,00,000)		
To Gross profit	12,84,706		

Extract of Balance – sheet

I. Equity and liabilities:	
Current liability	
Excise duty payable	50,000
II. Assets	
Current liabilities:	
CCRI	-
CCRCG	-
CCRDCG	25,000
Stock of finished goods	7,14,706
Stock of raw material	1,35,000

Working note: Calculation of consumption of raw material:

Opening stock of raw material	Nil
Add: Purchase of raw material	18,00,000
Less: Closing stock of raw material (1500 x 90)	1,35,000
Consumption of raw material	16,65,000

Calculation of value of finished goods stock:

Material cost $\left(\frac{16,65,000}{17,000} \times 5,000 \right)$	4,89,706
Labour cost (5,000 x 20)	1,00,000
Excise duty $\left(\frac{4,25,000}{17,000} \times 5,000 \right)$	1,25,000
Value of stock	7,14,706

Q. 5 Prepare Trading account and extract of Balance – sheet from the following data:

- (i) Purchase 70,000 Kg. @ ₹80 each (excluding ED ₹8)
- (ii) Production = 50,000 Kg.
- (iii) Removal = 40,000 Kg.
- (iv) Sales = 30,000 Kg. @ ₹150 each (Including ED ₹15)
- (v) Closing stock of raw material = 15,000 Kg.
- (vi) Labour = ₹10 per unit consumed
- (vii) Opening stock of raw material = 10,000 Kg. @ ₹70 each (ED ₹6)
- (viii) Apply FIFO method of stock valuation.

Solution:

Trading account

Particulars	₹	Particulars	₹
To opening stock of finished goods	Nil	By Sales	45,00,000
To consumption of raw material	50,40,000	Less: Contra	(4,50,000)
To Labour (65,000 x 10)	6,50,000	By Closing stock	26,40,000
To Excise duty	7,50,000		
Less: Contra	(4,50,000)		
To Gross profit	7,00,000		

Extract of Balance – sheet

I. Equity and liabilities:		
Current liabilities:		
Excise duty payable	6,00,000	
Less: CCRI	5,60,000	40,000
Provision for excise duty		1,50,000
II. Assets		
Current assets:		
Stock of finished goods		26,40,000
Stock of raw material		12,00,000

Working notes:

Calculation of raw material consumed:

Opening stock (10,000 x 64)	6,40,000
Add: Purchases (70,000 x 80)	56,00,000
Less: Closing stock (15,000 x 80)	12,00,000
Raw material consumption	50,40,000

Calculation of finished goods stock:

Material cost $\left(\frac{65,000}{50,000} \times 20,000 \right) \times 80$	20,80,000
Labour cost (10 x 26,000)	2,60,000
Excise duty (15 x 20,000)	3,00,000
Value of finished goods stock	26,40,000

Q. 6 A factory went into commercial production on 1st April 2004. It uses as its raw material X on which excise duty of ₹30 per Kg. is paid and raw material Y on which excise duty of ₹20 per Kg. is paid. On 31st March, 2004 it had stock of 20,000 Kgs. Of X and 15,000 Kgs. Of Y which it had purchased at an inclusive price of ₹150 per Kg. for X and ₹120 per Kg. for Y. the suppliers of X and Y are to receive payment on 15th May, 2004.

During April 2004, the factory manufactured 40,000 units of the end product for which the consumption of material X was 60,000 Kgs. And Material Y was 45,000 Kgs. The excise duty on the end product is ₹60 per unit. 30,000 units of the end product were despatched, 8,000 units were kept in bonded warehouse and 2,000 Kgs. Were kept in finished goods godown.

During the month, the factory purchased 50,000 Kgs. of X at ₹145 per Kg. (inclusive of excise duty of ₹30 per Kg.) on credit of 60 days and 50,000 Kgs. of Y at ₹110 per Kg (inclusive of excise duty of ₹20 per Kg.) on credit of 45 days.

The cost of converting the raw materials into finished product amounts to ₹150 per unit of end product of which ₹100 is cash cost paid immediately and ₹50 represents non – cash charges for depreciation. There is no work – in – process.

Sales are effected at ₹750 per unit in respect of credit transactions and at ₹700 per unit in respect of cash transactions. 20 % of dispatches were in respect of cash transactions while the balance 80 % were in respect of credit transactions (one month credit).

You are required to:

- Calculate CENVAT credit available, CENVAT credit availed of and balance in CENVAT credit as on 30th April, 2004.
- Show the necessary ledger accounts in respect of CENVAT.

(c) Calculate the value of inventory –

(i) Raw material

(ii) Finished goods in bonded warehouse

(iii) Finished goods in finished goods godown

Use FIFO method for valuation of stock.

(iv) Show the ledger accounts of customers, suppliers and bank, assuming that the necessary bank balance is available at the start of the month to meet cash expenses of that month.

(v) Calculate the working capital as on 30th April 2004.

(vi) State the impact of CENVAT on working capital requirement of the factory as on 30th April, 2004.

Solution:

(a)

(i) Calculation of Cenvat credit receivable input available:

Opening stock		
X (20,000 x 30)	6,00,000	
Y (15,000 x 20)	3,00,000	9,00,000
Purchases:		
X (50,000 x 30)	15,00,000	
Y (50,000 x 20)	10,00,000	25,00,000
		34,00,000

(ii) Calculation of CCRI availed:

Units removed from premises = 32,000 units

Hence CCRI availed = 32,000 x 60 = 19,20,000

(iii) Calculation of balance available in CCRI:

CCRI available	34,00,000
Less: CCRI availed	19,20,000
Balance available in CCRI	14,80,000

(b)

CCRI account

Particulars	₹	Particulars	₹
To Balance b/d	9,00,000	By Excise duty payable	19,20,000
To Creditors a/c	25,00,000	By Balance c/d	14,80,000
	34,00,000		34,00,000

(c)

Calculation of value of inventory: (FIFO method)

(i) Raw material inventory

	X	Y
Opening balance	20,000	15,000
Add: Purchases	50,000	50,000
Less: Consumption	(60,000)	(45,000)
Closing balance	10,000	20,000
Applicable rate	115 (145 - 30)	90 (110 - 20)

(ii) Finished goods in warehouse: 8,000 Kg.

Material X $\left(\frac{60,000}{40,000} \times 8,000 \right) \times 115$	13,80,000
Material Y $\left(\frac{45,000}{40,000} \times 8,000 \right) \times 90$	8,10,000

Conversion cost (8,000 x 150)	12,00,000
Excise duty (8,000 x 60)	4,80,000
	38,70,000

(iii) Finished goods in godown (2,000 Kg.)

Value of 8,000 units is 38,70,000

Value of 2,000 units = $\left(\frac{38,70,000}{8,000} \times 2,000\right) = 9,67,500$

(d)

Customer a/c

To sales (30,000 x 80 % x 750)	1,80,00,000	By Balance c/d	1,80,00,000
	1,80,00,000		1,80,00,000

Supplier a/c

Particulars	₹	Particulars	₹
		By Balance b/d	
		X (20,000 x 150)	30,00,000
		Y (15,000 x 120)	18,00,000
		By Purchases a/c	
		X (50,000 x 115)	57,50,000
		Y (50,000 x 90)	45,00,000
		By CCRI a/c	
		X (50,000 x 30)	15,00,000
To Balance c/d	1,75,00,000	Y (50,000 x 20)	10,00,000
	1,75,00,000		1,75,00,000

Bank a/c

Particulars	₹	Particulars	₹
To Balance b/d	40,00,000	By factory expenses	40,00,000
To sales (30,000 x 20 % x 700)	42,00,000	By Balance c/d	42,00,000
	82,00,000		82,00,000

Calculation of working capital:

Inventories:	
Raw material	29,50,000
Finished goods	48,37,500
Debtors	1,80,00,000
Bank balance	42,00,000
CCRI	10,00,000
Creditors	(1,75,50,000)
Working capital	1,34,37,500

Q.7 A company purchased a plant for ₹25,00,000 during the financial year 2009 – 2010 and installed it immediately. The price charged by the vendor included excise duty (cenvat credit available) of ₹2,50,000. During this year, the company also produced excisable goods on which excise duty chargeable is ₹2,25,000. Show the journal entries describing cenvat credit treatment and what amount should the plant be capitalized?

[CWA – Dec. 2010]

SOLUTION:

Journal entries

Particulars		Debit	Credit
Plant a/c	Dr.	22,50,000	
Cenvat credit receivable (capital goods) a/c	Dr.	1,25,000	
Cenvat credit receivable (deferred capital goods) a/c	Dr.	1,25,000	
To Vendor a/c			25,00,000
Excise duty a/c	Dr.	2,25,000	
To Cenvat credit receivable (Capital goods) a/c			1,25,000
To Bank a/c			1,00,000

Q.8 W Ltd. purchased machinery for ₹ 80 lakhs from X Ltd. during 2010-11 and installed the same immediately. Price includes excise duty of ₹ 8 lakhs. During the year 2010-11, the company produced excisable goods on which excise duty of ₹ 7.20 lakhs was charged. Give necessary entries explaining the treatment of Cenvat Credit. [CA – May, 2013]

SOLUTION:

Journal entries

Particulars		Debit	Credit
Machinery a/c	Dr.	72,00,000	
Cenvat credit receivable (capital goods) a/c	Dr.	4,00,000	
Cenvat credit receivable (deferred capital goods) a/c	Dr.	4,00,000	
To Vendor a/c			80,00,000
Excise duty a/c	Dr.	7,20,000	
To Cenvat credit receivable (capital goods) a/c			4,00,000
To Bank a/c			3,20,000

Q.9 Dark Limited purchased a plant for ₹100 lakhs (excluding excise duty of ₹10 lakhs) from Mark Limited during 2015 – 16 and installed immediately. During 2015 – 16, the company produced excisable goods on which the excise authority charged excise duty to the extent of ₹9 lakhs. Show the necessary journal entries explaining the treatment of CENVAT credit in the books of Dark Limited. You are also required to indicate the value of plant at which it should be recorded in fixed asset register. [May, 2016]

Q.10 HS Limited manufactures goods and caters to both national and international markets. As on 31st March, 2015 it has the following stocks in its warehouse at factory:

Goods meant for national market – sale value of 100 lakhs

Goods meant for international market – Export value of 50 lakhs.

The company has a policy to mark up the products for national at one – third of cost while those for export are marked up at 150 % of its cost. Excise duty on goods is payable @ 12.36 %. The management is of the opinion that excise duty is payable only on clearance of goods from factory and as such the same should be a part of cost of inventory.

You are required to guide the company in the light of relevant guidance note.

[CA – May, 2015]

HUMAN RESOURCE ACCOUNTING

(1) HRA can be defined as process of identifying, measuring and communicating information's about human resource in financial statements. There are 2 school of thoughts for HRA accounting. One school of thought argue that humans are assets for the entity and hence should be recognized as assets in financial statement whereas another school of thought argue that we cannot record human resource as an asset.

(2) Reasons for not recognition as an asset:

- As per the definition of asset, assets are the resources owned and controlled by the entity but any entity cannot control and own humans.
- Assets depreciate by use; passage of time but human assets doesn't depreciate by use rather due to gaining knowledge value of human assets increases.
- Humans have their own emotions and sentiments which other assets does not have.

(3) There is a doubt about recognition of human resources as an asset but from time to time various methods are provided to calculate value of human assets.

(4) Following are the various methods for valuation of human resource

METHOD: 1 Capitalization of historical cost

- This method is given by R. Likert
- This model developed in 1967 in USA
- As per this model value of human asset can be measured as under:

Cost of recruitment	xxx
Cost of training	xxx
Cost of development	xxx
Other cost necessary to make humans suitable for the job	xxx
Value of human assets	xxx

- As per this model human resource asset should be amortized over the expected length of service of employee.
- Unamortized human resource cost should be disclosed in balance – sheet as “Investment in human assets”.

METHOD: 2 Replacement cost method

- This model is developed by Flam Holtz.
- As per this model human resource should be recognized by using replacement cost of the employee. Replacement cost refers cost of replacing an employee by a substitute who can provide same set of services as that of the employee being replaced.

METHOD: 3 Opportunity cost method

- This model is developed by Hekimian and Jones.
- This model specify that value of employee should be the opportunity cost of next best alternative.

METHOD: 4 Discounted wages and salaries method

- This method is developed by LEV and SCHWARTZ.
- Following steps should be applied under this method:

Step: 1 Ascertain the number of employees in each age group.

Step: 2 Calculate future annual earnings of all employees till the retirement age.

Step: 3 Calculate present value of future earnings of all the employees in each group

Step: 4 Calculate total value of human capital which is the aggregate of present value of future earnings of all employees of all age group.

How to calculate maximum salary that can be paid to an employee?

Maximum salary that can be paid should be the maximum benefit that can be generated from such employee. For this purpose, calculation should be made for expected benefits due to employees. These benefits are based on expected return on capital employed.

QUESTION BANK FOR HRA

Q.1 From the following details, compute the total value of human resources of skilled and unskilled group of employees according to Lev and Schwartz model:

	Skilled	Unskilled
Annual average earnings of an employee till the retirement age	₹75,000	₹50,000
Age of retirement	68 years	65 years
Discount rate	15 %	15 %
Number of employees in the group	40	50
Average age	65	63

[CA – Nov. 2014]

Q.2 The following information is supplied to you about Lookdown Ltd.

Capital and reserves	
Equity shares of ₹100 each of which ₹75 has been called up	5,00,000
Equity shares in respect of which calls are in arrear @ ₹25 per share	₹1,00,000
General reserve	₹10,00,000
Profit and loss account (balance at the beginning of the year)	(₹25,00,000)
Profit / (loss) for the year	(₹1,80,000)
Industry average profitability	12.50 %
8 % Debentures of ₹10 each	8,00,000
Lookdown Limited is proposing to hire the services of Mr. X to turn the company around	
Minimum take home salary per month demanded by Mr. X	₹4,00,000
Average income tax rate on salaries above ₹3,00,000 per annum	25 %
Provident fund contribution by employer per month	₹50,000
Profits over and above target expected by hiring Mr. X	10 %

You are required to analyse the proposal and see whether it is worthwhile to employ Mr. X and also suggest the maximum emoluments that could be paid to him.

Note:

(a) PF contributions are tax exempt.

(b) Take home salary is that remaining after employee's contribution to PF @ ₹50,000 per month and after deduction of income – tax on salary.

[CA – May, 2014]

Q.3 From the following details, compute the total value of human resources of skilled and unskilled group of employees according to Lev and Schwartz (1971) model:

	Skilled	Unskilled
Annual average earnings of an employee till the retirement age	₹60,000	₹40,000
Age of retirement	65 years	62 years
Discount rate	15 %	15 %
Number of employees in the group	30	40
Average age	62 years	60 years

[CA – Nov. 2011]

Q.4 From the following data in respect of an employer, calculate the total value of human capital under Lev and Schwartz model.

Age	Unskilled		Semi – skilled		Skilled	
	No.	Average annual earnings (₹)	No.	Average annual earnings (₹)	No.	Average annual earnings (₹)
30 – 39	100	18,000	60	36,000	40	84,000
40 – 49	50	30,000	30	48,000	20	1,20,000
50 – 54	30	36,000	20	60,000	10	1,80,000

Retirement age is 55 year. Apply discount factor 20 %. In calculation of total value of human factor the lowest age of each class should be taken. Annuity factor @ 20 % are:

Years	5	10	15	20	25
Annuity factor @ 20 %	2.991	4.192	4.675	4.870	4.948

[CA – May, 2010]

Q.5 A company has as capital base of ₹1 crore on balance sheet date and has earned ₹11 lakhs. The return on investment (ROI) of the particular industry to which company belong is 12.5 %. If the services of a particular executive are acquired by the company, it is expected that the profit will increase by ₹2.5 lakhs over and above the target rate of 12.5 % on its existing capital base of 1 crore. Determine the amount of maximum bid price from the company for which that particular executive may expect and also state his expectation for maximum monthly salary.

[CA – Nov. 2006]

Q.6 An all equity company has fixed assets valued at ₹14,00,000 and net working capital valued at ₹3,00,000 earn after tax annual profit of ₹2,40,000. If company employs Mr. M an expert marketing manager, then annual profits after tax of the company will increase by ₹ 90,000. The rate of return on investment (ROI) of the industry to which the company belong is 15 %. Find the amount of maximum bid of this company to hire the services of Mr. M. also find maximum monthly salary company can offer to Mr. M.

Q.7 In a company there are 15 employees all of the age of 56 years and of same skill on balance sheet date and the retirement age of these employees is 60 years. The average salary of each of them till their retirement age is maintained at ₹75,000. The weighted average rate of cost of capital of the company is 12 %. You may assume that all the employees will survive till their retirement age. Compute value of human resources (human capital) of the company on the balance sheet date.

Q.8 Rose Limited provides you the following information on 31st March, 2016:

Capital and reserves:	
Equity share capital of ₹10 each of which ₹8 have been called up	8,00,000 shares
Calls in arrears	₹1,00,000
General reserve	₹7,50,000
50,000, 9 % Debentures of ₹100 each	₹50,00,000
Profit / (loss) for the year	(₹2,50,000)
Industry average profitability rate	12.50 %

The company is proposing to hire the service of Mr. Raman to turn around the company. You are required to determine the maximum salary that could be offered to him if it is expected that after his appointment, the profits of the company will increase by 10 % over and above the target profit.

[May, 2016]

Q.9 From the following details, compute according to Lev and Schwartz model, the total value of human resources of the employee groups skilled and unskilled.

Particulars	Skilled	Unskilled
Annual average earnings of an employee till the retirement age	₹50,000	₹ 30,000
Age of retirement	65 years	62 years
Discount rate	15 %	15 %

No. of employees in the group	20	25
Average age	62 years	60 years

Q.10 The normal rate of return on physical assets of similar firms in the industry is 12 % per annum, but a company belonging to that industry is earning annually @ 15 % on its physical assets with the help of its existing human capital. If company employs an expert production engineer then company can earn 17.5 % on its existing physical assets. The physical assets of the company are valued at ₹40,00,000. Find (i) The value of existing human capital of the company, and (ii) The maximum salary to be paid by the company for expert production engineer.

Q.11 From the following information in respect of S Ltd., Calculate the total value of human capital by Lev and Schwartz method assuming that employees in each age group are at the starting age of concerned age group and all the employees of the company will retire reaching the age of 50 years:

Age group of employees	No. of employees in age group	Average annual salary (per employee during the tenure of concerned age group)
30 – 34	60	₹ 60,000
35 – 39	70	₹ 70,000
40 – 44	40	₹ 88,000
45 – 49	30	₹ 90,000

Discount rate is 18 %.

Q.12 A company has a capital base of ₹ 1.5 crores and has earned profits of ₹ 11 lakhs. The Return on Investment (ROI) of the particular industry to which the company belongs is 12%. To expand its business, the company has decided to recruit a Vice- President for which it has received several applications. Out of which two executives were shortlisted whose proposals were as follows:

Mr. Ram demands a salary of ₹ 7.5 lakhs and proposes to achieve target profit.

Mr. Shyam demands ₹ 4.5 lakhs and proposes a 50% increase in current profits.

You are required to analyze whose proposal is more beneficial to the company. [RTP – May, 2016]

Q.13 Ascertain the value of human resources of Ajanta Limited on 1st January, 2009 which has 800 employees and their average salary per employee during the year 2009 is ₹30,000 per annum which will increase by ₹ 1,500 per year till their retirement. All the employees are due to retire on 31st December, 2015. The discount rate is 15 % per annum.

[Answer: ₹11,20,83,200]

SARVAGYA INSTITUTE OF COMMERCE

NON BANKING FINANCIAL COMPANIES

Introduction: A non – banking financial company is a company registered under the companies act, 1956 and engaged in the business of:

- (i) Providing loans and advances
- (ii) Acquisition of shares, debentures and other securities
- (iii) Leasing
- (iv) Hire – purchase
- (v) Insurance business
- (vi) Chit business

Non inclusion – NBFC does not include any institution whose principal business is:

- (i) Agriculture activity
- (ii) Industrial activity
- (iii) Sale / Purchase / Construction of immovable property

RNBC – A non – banking institution which is a company and which has its principal business of receiving deposits under any scheme or arrangement or any other manner, or lending in any manner is also a non – banking financial company. (Residuary non – banking company)

NBFC vs. Bank – NBFC's function like that of banks, however there are a few differences –

- (i) A NBFC cannot accept demand deposits.
- (ii) It is not a part of the payment and settlement system and as such cannot issue cheques to its customers.
- (iii) Deposits insurance facility of DICGC is not available for NBFC depositors unlike in case of bank.

Various terms relevant to Non – banking financial companies:

- (1) Breakup value

Breakup value	Equity share capital + Reserves – (Intangible assets + revaluation reserve)
	Number of shares of investee company

- (2) Carrying cost – Book value of assets including interest accrued thereon and not received.

- (3) Current investment – Readily realizable investments intended to be held for not more than one year from the date of investment.

- (4) Doubtful assets – (a) Term loan or (b) Lease assets or (c) Hire purchase asset or (d) any other assets, remaining substandard for a period exceeding 18 months.

- (5) Earning value – Capitalised value of an equity shares of a company based on average of the past three year's profit attributable to equity shareholders i.e. PAT minus preference dividend and adjustments for extra – ordinary and non – recurring items. Capitalization rate to be applied are as under:

- (a) Manufacturing company: 8 %
- (b) Trading company: 10 %
- (c) Other company (including NBFC): 12 %

Note: If investee company is a loss making company, earning value = zero.

$$\text{Earning value} = \frac{\text{Average profit before extraordinary items - Preference dividend}}{\text{Number of equity shares}}$$

$$K_e$$

(6) Fair value = Earning value per share + Break value per share / 2

(7) Net book value of Hire purchase assets:

Aggregate of overdue and future instalments receivables	xxx
Less: Balance of un matured finance charges	xxx
Less: Provision for non – performing assets (i.e. basic provision)	xxx
Net book value (used to compute additional provision)	xxx

(8) Net book value of Leased assets:

Aggregate of capital portion of overdue lease rental receivable (excluding interest)	
Add: Depreciated book value of the leased assets	
Add/ Less: Balance of lease adjustment account (Add: if debit balance/ Less: if credit balance)	

(9) Owned fund:

Equity share capital	xxx
Add: Preference share capital compulsorily convertible into equity	xxx
Add: Free reserves, securities premium account, capital reserves (representing surplus arising out of sale of assets) (revaluation reserves should be excluded)	xxx
Less: Accumulated losses, intangible assets, deferred revenue expenditure	xxx
Owned fund	xxx

(10) Standard assets – Assets –

- On which no default in repayment or principal or payment of interest is perceived; and
- Which does not disclose any problem and
- Which does not carry more than normal risk attached to the business.

(11) Sub – standard assets –

- Assets classified as NPA for a period of up to 18 months.
- Asset where the terms of the agreement regarding interest / or principal have been restructured / rescheduled after commencement of operations. This will be classified as sub – standard until the expiry of 1 year of satisfactory performance under the restructured or rescheduled terms.

Note: The above does not apply to infrastructure loans, for which separate considerations apply.

Subordinated debt – Fully paid up capital instruments which are:

- Unsecured
- Subordinated to the claims of other creditors
- Free from restrictive clauses
- Not redeemable at the instance of the holder or without the consent of the supervisory authority of the NBFC.

The book value of such investment should be discounted as under:

Remaining maturity of the instrument	Rate of discount
Up to 1 year	100 %
More than 1 year but up to 2 years	80 %
More than 2 years but up to 3 years	60 %
More than 3 years but up to 4 years	40 %
More than 4 years but up to 5 years	20 %

The discounted value should not exceed 50 % of Tier I capital.

Calculation of Tier I and Trier II capital:

Tier capital I	Tier capital II
Owned fund Less: Investment in shares of other NBFC Less: Investment in shares / Debentures/ bonds/ outstanding loans/ advances including HP and lease finance made to and deposits with subsidiaries and group companies, in excess of 10 % of owned fund.	Aggregate of – • Preference shares (except those considered in owned fund i.e. not convertible into equity) • Revaluation reserves discounted at 55 % (i.e. 45 %). • General provisions and loss reserves to the extent these are not attributable to actual diminution or identifiable potential loss in any specific asset Tier II capital should not exceed Tier I capital.

Non - Performing assets (NPA) –

Nature of asset / advance	Situation when considered as NPA
An asset (general)	• Interest overdue for 6 months or more
Term loans (inclusive of unpaid interest)	• Instalment overdue for 6 months or more; or • Interest overdue for 6 months or more
Demand / call loan (i.e. any loan which have initial repayment period of 36 months will be treated as demand loan)	• Overdue for 6 months or more from the date of demand / call or • Interest overdue for 6 months or more
Bill	• Overdue for 6 months or more
Debt and other short term loans/ advances, classified under “Other current assets”	• Interest / Income thereon overdue for 6 months or more
Dues on account of sale of asset/ services rendered/ reimbursement of expenses	• Overdue for 6 months or more
Lease rentals and hire purchase instalments	• Overdue for 12 months or more

Income recognition principal for a NBFC –

- (1) Income from NPAs – Income including interest/ discount or any other charges on NPA should be recognised only when it is actually realized.
- (2) HP assets – If the instalments are overdue the more than 12 months, income shall be recognised only when hire charges actually received.
- (3) Lease rentals – Where the lease rentals are overdue for more than 12 months, the income shall be recognised only on actual realization of the lease rental.
- (4) Income from investment –

Investment income	Income recognition principal
(a) Dividend on shares of companies and units of mutual fund	Cash basis. Accrual basis may be followed when the dividend is declared at the company's AGM and NBFC's right to receive payment is established.
(b) Income from bonds, Debentures of corporate and government securities / bonds.	Accrual basis. If interest rate is predetermined, interest is serviced regularly and interest is not in arrears.
(c) Income from government guaranteed bonds and securities of corporate bodies.	Accrual basis.

Valuation of investments –

Investments	Valuation rules
Long term investment	As per AS issued by ICAI
Quoted current investments (for each	Cost or market value whichever is lower

category, to be considered scrip - wise)	
Unquoted equity shares held as current investments	Cost or break – up value, which is lower. • Fair value may be substituted for break – up value, if considered necessary • Where investee co.'s balance sheet is not available for 2 years, value of shares would be cost or ₹1 whichever is lower.
Unquoted preference shares held as current investments	Cost or face value, whichever is lower.
Unquoted government securities/ government guaranteed bonds	Carrying cost
Unquoted current investments in units of mutual fund	NAV declared by mutual fund
Commercial papers	Carrying cost

Provision requirements:

(a) For loans, advances and other credit facilities including bills purchased and discounted:

Types of assets	Provisioning norms
Standard assets	0.35 % [For May 2017 and Nov. 2017 exam]
	0.40 % [From May 2018]
Sub – standard assets	10 %
Doubtful assets:	
For unsecured portion:	100 %
For secured portion:	
Period for which the assets is doubtful	Provision requirement
Up to 1 year	20 %
1 – 3 years	30 %
More than 3 years	50 %
Loss assets	100 %

(b) Lease and HP assets:

(i) Basic provisions – In respect of HP assets, provision should be made for the total dues (overdue and future instalments taken together) as reduced by –

(a) Finance charges not credited to profit and loss account and carried forward as un matured finance charges

(b) Depreciated value of the underlying asset.

For provisioning purpose, depreciated value of the asset shall be notionally computed as original / actual cost less depreciation at 20 % p.a. on SLM basis.

(ii) Additional provision – For lease and HP asset, additional provision will be as under:

Types of assets	Period of overdue	Provisioning norms
Sub – standard assets	More than 12 months but up to 24 months	10 % of net book value
Doubtful assets	More than 24 months but up to 36 months	40 % of net book value
	More than 36 months but up to 48 months	70 % of net book value
Loss assets	More than 48 months	100 % of net book value

Note: On expiry of a period of 12 months after the due date of the last instalment of hire purchased/ leased asset, the entire net book value shall be fully provided for.

Provision requirements for HP and leasing:

Basic provision:

Installment due (with interest)	xxx
Add: Installment not yet due (without interest)	xxx
	xxx
Less: Net book value of asset (Cost price – Depreciation @ 20 % on SLM)	(xxx)
Basic provision	xxx

Note: Ignore basic provision, if amount is negative.

Calculation of tier I capital:

Equity share capital	xxx
Free reserves	xxx
Capital reserve if realized in cash	xxx
Less: Losses	(xxx)
Less: Intangible assets	(xxx)
Total owned fund	xxx
Less: Excess of investment / loan to group companies over 10 % of total owned fund	(xxx)
Tier I capital / Net owned fund	xxx

Calculation of tier II capital:

Non – convertible preference share capital	Xxx
Convertible debentures	Xxx
Revaluation reserve @ 45 %	xxx
Tier II capital	Xxx

Capital tier II cannot exceed capital tier I.

Risk weighted assets (rate of risk)

Name of asset	%
Cash and bank balance	0
Approved investment	0
Other investment in government companies	20
Balance CA and FA	100 %
Contingent liabilities	100 %

ASSET CLASSIFICATION

In the interest of harmonisation, the asset classification norms for NBFCs-ND-SI and NBFCs-D are being brought in line with that of banks, in a phased manner, as given below.

Lease Rental and Hire-Purchase Assets shall become NPA:

- if they become overdue for 9 months (currently 12 months) for the financial year ending March 31, 2016;
- if overdue for 6 months for the financial year ending March 31, 2017; and
- if overdue for 3 months for the financial year ending March 31, 2018 and thereafter.

Assets other than Lease Rental and Hire-Purchase Assets shall become NPA:

- if they become overdue for 5 months for the financial year ending March 31, 2016;
- if overdue for 4 months for the financial year ending March 31, 2017; and
- if overdue for 3 months for the financial year ending March 31, 2018 and thereafter.

For all loan and hire-purchase and lease assets, sub-standard asset would mean:

- an asset that has been classified as NPA for a period not exceeding 16 months (currently 18 months) for the financial year ending March 31, 2016;
- an asset that has been classified as NPA for a period not exceeding 14 months for the financial year ending March 31, 2017; and

iii. an asset that has been classified as NPA for a period not exceeding 12 months for the financial year ending March 31, 2018 and thereafter.

For all loan and hire-purchase and lease assets, doubtful asset would mean:

- an asset that has remained sub-standard for a period exceeding 16 months (currently 18 months) for the financial year ending March 31, 2016;
- an asset that has remained sub-standard for a period exceeding 14 months for the financial year ending March 31, 2017; and
- an asset that has remained sub-standard for a period exceeding 12 months for the financial year ending March 31, 2018 and thereafter.

Provisioning for Standard Assets

The provision for standard assets for NBFCs-ND-SI and for all NBFCs-D has being increased to 0.40% (at present 0.25%). The compliance to the revised norm will be phased in as given below:

0.30% by the end of March 2016

0.35% by the end of March 2017

0.40% by the end of March 2018

QUESTION BANK

Q.1 Yati Finance Ltd. is a non – banking finance company. The extracts of its balance sheet are given below:

Liabilities	Amount	Assets	Amount
Paid up equity share capital	100	Leased out assets	800
Free reserves	500	Investments:	
Loans	400	In shares of subsidiaries and group companies	100
Deposits	400	In debentures of subsidiaries and group companies	100
		Cash and bank balances	200
		Deferred expenditure	200
	1,400		1,400

You are required to compute Tier – 1 capital of Yati Finance Ltd. according to NBFC prudential norms (RBI) directions 1998.

[Study material]

Q.2 Nidhi Finance Ltd. is a non – banking finance company. It makes available to you the cost and market price of various investments held by it.

(₹in lakhs)

	Cost	Market price
Equity shares:		
Scrip A	40.00	40.80
Scrip B	21.00	16.00
Scrip C	40.00	24.00
Scrip D	40.00	80.00
Scrip E	60.00	70.00
	201.00	230.80
Mutual funds		
MF 1	26.00	16.00
MF 2	20.00	14.00
MF 3	4.00	6.00
	50.00	36.00
Government securities		
GV 1	40.00	44.00
GV 2	50.00	48.00
	90.00	92.00

- (i) Can the company adjust depreciation of a particular item of investment within a category?
(ii) What should be the value of investment?

Q.3 While closing its books of account on 31st March, 2011, a non – banking financing company has its advances classified as follows:

	(₹ in lakhs)
Standard assets	16,800
Sub – standard assets	1,340
Secured portion of doubtful debts:	
Up to 1 year	320
1 year to 3 years	90
More than 3 years	30
Unsecured portion of doubtful debts	97
Loss assets	48

Calculate the amount of provision, which must be made against the advances.

Q.4 Yati Ltd. is a non – banking finance company who accepts public deposit and also deal in hire purchase business. It provides you with the following information regarding major hire purchase deals as on 31.3. 2009. Few machines were sold on hire purchase basis. The hire purchase price was set as ₹100 lakhs as against the cash price of ₹80 lakhs. The amount was payable as:

(i) ₹20 lakhs down payment and balance in 5 equal instalments. The hire vendor collected 1st instalment as on 31.3.2010. The company was finalizing accounts for the year 31.3.2011. Till 15.5.2011, the date on which the board of directors signed the accounts, the second instalment was not collected. Presume IRR to be 10.42 %. Required:

- (i) What should be the principal outstanding as on 1.4.2010? Should the company recognise financial charges for the year 2010 – 2011 as income?
(ii) What should be the net book value of assets as on 31.3.2011 so far as Yati Ltd. is concerned as per NBFC prudential norms requirement for provisioning?
(iii) What should be the amount of provision to be made as per prudential norms for NBFC laid down by RBI?
[CA – Nov. 2012]

Q.5 While closing its books of account as on 31.12.2009 a non – banking finance company (NBFC) has its advances classified as under:

	₹ in lakhs
Standard assets	10,000
Sub – standard assets	1,000
Secured portion of doubtful assets:	
Up to 1 year	160
One year to three years	70
More than three years	20
Unsecured portion of doubtful assets	90
Loss assets	30

Calculate the provision to be made against advances by NBFC as per prudential norms.

[CA – May, 2010]

Q.6 Peoples Financiers Limited is an NBFC providing hire purchase solutions for acquiring consumer durables. The following information is extracted from its books of accounts for the year ended 31st March, 2014:

Assets funded	Interest overdue but recognized in profit and loss account		Net book value of assets outstanding (₹ crores)
	Period overdue	Interest amount (₹ crores)	
LCD televisions	Up to 12 months	480.00	20,123.00
Washing machine	For 24 months	102.00	2,410.00
Refrigerators	For 30 months	50.50	1,280.00
Air conditioners	For 45 months	26.75	647.00

You are required to calculate the amount of provision to be made.

[CA – May, 2014]

Q.7 Sagar future is non –banking finance company. It makes available to you the costs and market price of various investments held by it as on 31.3.2015 as under:

(₹ in lakhs)

Scripts:		Cost	Market price
A	Equity shares		
	A	60.00	61.20
	B	31.50	24.00
	C	60.00	36.00
	D	60.00	120.00
	E	90.00	105.00
	F	75.00	90.00
	G	30.00	6.00
B	Mutual funds		
	MF – 1	39.00	24.00
	MF – 2	30.00	21.00
	MF – 3	6.00	9.00
C	Government securities -		
	GV – 1	60.00	66.00
	GV – 2	75.00	72.00

(i) Can the company adjust depreciation of a particular item of investment within a category?

(ii) What should be the value of investments as on 31.3.2015?

(iii) Is it possible of off – set depreciation in investment in mutual fund against appreciation of the value of investment in equity shares and government securities?

[CA – Nov. 2015]