Student's views

Before starting IPCC, I have heard that Cost & FM is the toughest paper of all. But after completing classes from CA Namit Arora Sir, I found it is the easiest. This paper is all about concept and sir makes them crystal clear for students. Another problem in this paper is its length, but class notes make it very easy to revise the whole subject in lesser time.

Vaibhav Singhal [Marks 92, Roll No 229886, Rank 23, May 2012]

Hello dear friends. This is Nishank Pundir. I secured all India 31st Rank in IPCC in Nov 2012 attempt. The main contribution in that was the coaching of Cost & FM which was provided by Sir CA Namit Arora. I got 88 marks in that particular subject which was out of my expectations before the result. Because when I started my IPCC coaching, Cost & FM was the only fearful subject for me. But due to Sir's successful effort & methodology of teaching not only helped me a lot to overcome that fear but also to secure good marks. Sir's way of teaching is very outstanding and also so simple that anybody can understand their perfect and superb concepts and notes very well. He is too friendly and also a best motivator as I know. Hence at last instead of searching any other teacher I would prefer sir CA Namit Arora for Cost & FM.

Nishank Pundir [Marks 88, Roll No 246824, Rank 31, Nov 2012]

He never advised me to just memories lessons. He made me understand the subject fully well. I did not have the last minute tension, I am not regretting it one bit but today I am a Rank holder only because of CA Namit Arora Sir. Thank you very much sir.

Himanshu Goel [Marks 82, Roll No 230147, Rank 30, Nov 2012]

Studying Cost & FM from CA Namit Arora Sir is an opportunity which if fully utilized proves to be a blessing for a CA student. Timely completion of the course with coverage of 100% syllabus alongwith thorough understanding of all concepts are the aspect which delivered by sir. Namit sir made the subject so easy to understand that I was able to score 89 in Cost & FM which is my highest score in IPCC and added to my aggregate helping me to achieve Rank 27.

Nitin Goel [Marks 89, Roll No 230669, Rank 27, May 2013]

Sir I owe it to you, I only read your suggested concept for my exam during my revision time and I don't know how you did it, but 100% questions came from your suggested concepts and sir I got 91 marks in Cost and FM only because of you sir. Thanks a lot sir.

Rahul Sharma [Marks 91, Roll No 248656, May 2013]

I found Sir's teaching methodology quite fruitful. The technique of clearing the doubts, way of making the formula understandable helps a lot in the exam as well as your motivational words kept me motivated every time towards my goal.

Suraj Baniya [Marks 88, Roll No 357246, Rank 41, Nov 2013]

I never felt that Cost FM is one of the toughest subject in IPCC. Namit Sir cleared each and every concept in so much easy way, his way of teaching is ultimate, no one can forget any concept of Cost FM entire the life. Thanks a lot Namit Sir, I scored 91 in his subject and due to this score I got Rank in IPCC.

Kiran Bhusal [Marks 91, Roll No 344437, Rank 48, May 2014]

QUESTION 1 (a)

The following particulars refers to process used in the treatment of materials subsequently, incorporated in a component forming part of an electrical appliance:

(i) The original cost of the machine used (Purchased in June 2008) was ₹10,000. Its estimated life is 10 years, the estimated scrap value was ₹1,000, and the estimated working time per year (50 weeks of 44 hours) is 2200 hours of which machine maintenance etc., is estimated to take up 200 hours. No other loss of working time expected setting up time, estimated at 100 hours, is regarded as productive time (Holiday to be ignored).

(ii) Electricity used by the machine during production is 16 units per hour at cost of a 9 paisa per unit. No current is taken during maintenance or setting up.

(iii) The machine required a chemical solution which is replaced at the end of week at a cost of ₹20 each time.

(iv) The estimated cost of maintenance per year is ₹1,200.

(v) Two attendants control the operation of machine together with five other machines. Their combined weekly wages, insurance and employer's contribution to holiday pay amount ₹120.

(vi) Departmental and general works overhead allocated to this machine for the current year amount to ₹2,000.

You are required to calculate machine hour rate of operating the machine.

[(5 Marks) Same as BQ 22 and BQ 25 of Chapter 3 Cost]

Answer

Statement of Machine Hour Rate (1 Machine ; 1 Year)

Particulars	*Amount*
(A) Standing Charges:	
Depreciation [(10,000 – 1,000) ÷ 10 Years]	900
Attendants wages, insurance etc. (120 × 50 weeks × $^{1}/_{6}$)	1,000
Departmental and works overhead	2,000
Total Standing Charges (A)	***3,900***
(B) Running Expenses:	
Electricity (1900 hours × 16 units per hour × 0.09)	2,736
Chemical solution (₹20 × 50 weeks)	1,000
Maintenance	1,200
Total Running expenses (B)	***4,936***
Total Expenses of one machine for four week (A+B)	***8,836***
÷ Productive Machine Hours (Running and setting up)	***÷ 2000***
Machine Hour Rate	***₹4.418***

QUESTION 1 (b)

A dairy product company manufacturing baby food with a shelf life of one year furnishes the following information:

(i) On 1st January, 2016 the company has an opening stock of 20,000 packets whose variable cost is ₹180 per packet.

(ii) In 2015, production was 1,20,000 pockets in 2016 is 1,50,000 packets. Expected sales for 2016 is 1,60,000 packets.

(iii) In 2015, fixed cost per unit was ₹60 and it is expected to increase by 10% in 2016. The variable cost is expected to increase by 25%. Selling price for 2016 has been fixed at ₹300 per packet.

You are required to calculate the Break-even volume in units for 2016

[(5 Marks) Same as BQ 27 of Chapter 12 Cost]

Answer

Alternative 1: FIFO Method

Fixed cost through contribution from first 20,000 units	=	20,000 units × (300 - 180)
	=	24,00,000
Remaining fixed cost through units produced in 2016	=	79,20,000 – 24,00,000
	=	55,20,000
No of units of 2016 to be sold to reach Break – even point	=	$\frac{\text{Remaining fixed cost}}{\text{Contribution of 2016 units}}$
	=	$\frac{55,20,000}{300-225}$
	=	73,600 units
Break – even point	=	20,000 units + 73,600 units
	=	***93,600 units***

Alternative 2: WEIGTED AVERAGE Method

Break – even point	=	$\frac{\text{Fixed cost}}{\text{Composite contribution per unit}}$
	=	$\frac{79,20,000}{80.2941}$
	=	***98,637.38 units***

Working Notes:

(1)	Fixed cost in 2016	=	Fixed cost in 2015 + 10% increase
		=	(1,20,000 units × ₹60 per unit) + 10%
		=	***79,20,000***
(2)	Variable cost in 2016	=	Variable cost in 2015 + 25% increase
		=	180 per unit + 25%
		=	***225 per unit***
(3)	Composite contribution per unit	=	Total Contribution ÷ Total Units
		=	$\frac{20,000 \times 120 + 1,50,000 \times 75}{20,000 + 1,50,000}$
		=	***80.2941 per unit***

QUESTION 1 (c)

(i) What is sinking fund and how is it calculated ?

(ii) A company has purchased a plant for 10,00,000 with a useful life of 6 years. It expects that 15,00,000 will be required to replace the plant after 6 years. To ensure that money is available at the time of replacement, the company has created a sinking fund.

You are required to determine the amount to be deposited annually. If the fund earns interest at 8% per annum. Given $CVFA_{0.08',6} = 7.336$

[(5 Marks) Same as BQ 19 and PYQ 1 of Chapter 11 FM]

Answer

(i) ***Sinking Fund*** It is the fund for a specified purpose by way of sequence of periodic payments over a time period at a specified interest rate.

Formula:	FVA	=	R [FVIFA (i,n)]
	FVA	=	Amount to be received in future

R = Periodic payment / Installment
i = Rate of interest
n = Period

(ii) Amount to be deposited annually = Amount required in future ÷ Future Value Annuity
= 15,00,000 ÷ 7.336
= ***2,04,471 per annum***

QUESTION 1 (d)

A company had the following Balance Sheet as on 31st March, 2015.

Liabilities	*₹*	*Assets*	*₹*
Equity Share Capital of ₹10 each	40,00,000	Fixed Assets (Net)	1,28,00,000
Reserve and Surplus	8,00,000	Current Assets	32,00,000
15% Debentures	80,00,000		
Current Liabilities	32,00,000		
	1,60,00,000		***1,60,00,000***

The additional information given is as under:

Fixed cost per annum (excluding interest)	₹32,00,000
Variable operating cost ratio	70%
Total assets turnover ratio	2.5
Income Tax rate	30%

Required:

(i) Operating Leverage
(ii) Financial Leverage
(iii) Combined Leverage
(iv) Earnings Per Share

[(5 Marks) Same as PYQ 4, 12 and 17 of Chapter 2 FM]

Answer

Working Notes:

Income Statement

Particulars	*₹*
Sales (2.5 times of 1,60,00,000)	4,00,00,000
Less: Variable Cost @ 70% of 400 Lacs	2,80,00,000
Contribution	***1,20,00,000***
Less: Fixed Cost	32,00,000
EBIT	***88,00,000***
Less: Interest @ 15% of 80,00,000	12,00,000
EBT	***76,00,000***
Less: Tax @ 30%	22,80,000
EAT	***53,20,000***

(i) ***Calculation of OL:***

$$OL = \frac{\text{Contribution}}{\text{EBIT}} = \frac{1,20,00,000}{88,00,000} = \textbf{1.364 times}$$

(ii) ***Calculation of FL:***

$$FL = \frac{\text{EBIT}}{\text{EBT}} = \frac{88,00,000}{76,00,000} = \textbf{1.158 times}$$

(iii) ***Calculation of CL:***

CL = OL × FL = 1.364 × 1.158 = ***1.579 times***

(iv) Calculation of EPS:

$$EPS = \frac{EAT}{No.\ of\ Shares} = \frac{53,20,000}{4,00,000} = ₹13.30$$

QUESTION 2 (a)

The following information is available from a company's records for March, 2016:

(a)	Opening Balance of Creditors Account	₹25,000
(b)	Closing Balance of Creditors Account	₹40,000
(c)	Payment made to Creditors	₹5,80,000
(d)	Opening Balance of Stores Ledger Control Account	₹40,000
(e)	Closing Balance of Stores Ledger Control Account	₹65,000
(f)	Wages paid (for 8000 hours)	₹4,00,000
	20% relate to indirect workers	
(g)	Various indirect expenses incurred	₹60,000
(h)	Opening Balance of WIP Control Account	₹50,000

(i) Inventory of WIP at the end of the month includes materials worth 35,000 on which 400 labour hours have been booked.

(j) Factory overhead is charged to production at budgeted rate based on direct labour hours.

(k) Budgeted overhead cost is 20,80,000 for budgeted direct labour hours of 1,04,000.

You are required to prepare Creditors A/c, Stores Ledger Control A/c, WIP Control A/c, Wages Control A/c and Factory Overhead Control A/c.

[(8 Marks) Same as BQ 4 and 5 of Chapter 13 Cost]

Answer

Creditors A/c

Particulars	*₹*	*Particulars*	*₹*
To Cash A/c	5,80,000	By Balance b/d	25,000
To Balance c/d	40,000	By Purchases/ SLC A/c (Bal. figure)	5,95,000
	6,20,000		***6,20,000***

Stores Ledger Control A/c

Particulars	*₹*	*Particulars*	*₹*
To Balance b/d	40,000	By WIP Control A/c (Bal. figure)	5,70,000
To Purchases/ Creditors A/c	5,95,000	By Balance b/d	65,000
	6,35,000		***6,35,000***

WIP Control A/c

Particulars	*₹*	*Particulars*	*₹*
To Balance b/d	50,000	By Finished Control A/c	10,05,000
To Stores Ledger Control A/c	5,70,000	By Balance c/d	63,000
To Wages Control A/c	3,20,000		
To Factory Overhead Control A/c	1,28,000		
	10,68,000		***10,68,000***

Wages Control A/c

Particulars	*₹*	*Particulars*	*₹*
To Cash A/c (for 8,000 hours)	4,00,000	By WIP Control A/c (6,400 hours)	3,20,000
		By Factory Overhead Control A/c (1,600 hours i.e. 20% of 8,000 hours)	80,000
	4,00,000		***4,00,000***

Factory Overhead Control A/c

Particulars	₹	Particulars	₹
To Cash A/c	60,000	By WIP Control A/c	1,28,000
To Wages Control A/c	80,000	(6400 hours × ₹20)	
		By Costing P/L A/c	12,000
		(Under recovered)	
	1,40,000		**1,40,000**

Working Notes:

(1) Factory overheads recovery Rate = Budgeted Factory OH ÷ Budgeted Labour Hours
= 20,08,000 ÷ 1,04,000
= ***₹20 per hour***

(2) Wage rate per hour = Wages Paid ÷ Labour Hours
= 4,00,000 ÷ 8,000
= ***₹50 per hour***

(3) Valuation of Closing WIP = Materials + Labour + Factory Overhead
= 35,000 + 400 hours × 50 + 400 hours × 20
= ***63,000***

QUESTION 2 (b)

With the following ratios and further information given below prepare a Trading Account, Profit and Loss Account and Balance Sheet of ABC Company.

Fixed Assets	₹40,00,000
Closing Stock	₹4,00,000
Stock turnover ratio	10 times
Gross Profit Ratio	25%
Net Profit Ratio	20%
Net profit to capital	1/5
Capital to total liabilities	1/2
Fixed assets to capital	5/4
Fixed assets / Total current assets	5/7

[(8 Marks) Same as BQ 14 of Chapter 1 FM]

Answer

Trading and Profit & Loss Account

Particulars	₹	Particulars	₹
To Opening Stock	80,000	By Sales	32,00,000
To Purchase & Conversion Cost (b.f.)	27,20,000	By Closing Stock	4,00,000
To Gross Profit c/d (25% of 32 Lacs)	8,00,000		
	36,00,000		**36,00,000**
To Operating Expenses (b.f.)	1,60,000	By Gross Profit b/d	8,00,000
To Net Profit	6,40,000		
	8,00,000		**8,00,000**

Balance Sheet

Liabilities	₹	Assets		₹
Capital	32,00,000	Fixed Assets		40,00,000
Other Liabilities	64,00,000	Current Assets:		
		Stock	4,00,000	
		Other CA (b.f.)	52,00,000	56,00,000
	96,00,000			**96,00,000**

Working Notes:

(i) Calculation of Capital:

$$\frac{\text{Fixed Assets}}{\text{Capital}} = 5/4 \quad \text{or} \quad \text{Capital} = 40,00,000 \times 4/5$$

$$= \textbf{₹32,00,000}$$

(ii) Calculation of Other Liabilities:

$$\frac{\text{Capital}}{\text{Other Liabilities}} = 1/2 \quad \text{or} \quad \text{Other Liabilities} = 32,00,000 \times 2$$

$$= \textbf{₹64,00,000}$$

(iii) Calculation of Current Assets:

$$\frac{\text{Fixed Assets}}{\text{Current Assets}} = 5/7 \quad \text{or} \quad \text{Current Assets} = 40,00,000 \times 7/5$$

$$= \textbf{₹56,00,000}$$

(iv) Calculation of Net Profit:

$$\frac{\text{Net Profit}}{\text{Capital}} = 1/5 \quad \text{or} \quad \text{Net Profit} = 32,00,000 \times 1/5$$

$$= \textbf{₹6,40,000}$$

(v) Calculation of Sales:

$$\frac{\text{Net Profit}}{\text{Sales}} = 20\% \quad \text{or} \quad \text{Sales} = 6,40,000 \div 20\%$$

$$= \textbf{₹32,00,000}$$

(vi) Calculation of Opening Stock:

COGS = 75% of Sales = 75% of 32,00,000 = 24,00,000

$$\frac{\text{COGS}}{\text{Average Stock}} = 10 \quad \text{or} \quad \text{Average Stock} = 24,00,000 \div 10$$

$$= 2,40,000$$

Average stock = (Opening Stock + Closing Stock) ÷ 2 = 2,40,000

Opening Stock = (2,40,000 × 2) – 4,00,000 = **₹80,000**

QUESTION 3 (a)

X Associates undertake to prepare income tax returns for individuals for a fee. They use the weighted average method and actual costs for the financial reporting purposes. However, for internal reporting, they use a standard costs system. The standards, based on equivalent performance, have been estimated as follows:

Labour per return	5 hours	@ ₹40 per hour
Overhead per return	5 hours	@ ₹20 per hour

For March 2015 performance, budgeted overhead is ₹98,000 for standard labour hours allowed. The following additional information pertains to the month of March 2015:

March 1	Return-in-process (25% complete)	200 Nos
	Return started in March	825 Nos
March 31	Return-in-process (80% complete)	125 Nos

Cost Data:

March 1	Return-in-process:	Labour	₹12,000
		Overheads	₹5,000
March 1 to 31	Labour (4,000 hours)		₹1,78,000
	Overheads		₹90,000

You are required to compute:

(a) For each element, equivalent units of performance and the actual cost per equivalent unit.
(b) Actual cost of return-in-process on March 31.
(c) The standard cost per return.
(d) The labour rate and labour efficiency variance as well as overhead volume and overhead expenditure variance.

[(8 Marks) Very good question, based on concept of equivalent production in process costing for service industry (preparation of return belongs to service) and linked with standard costing]

Answer

(a) Statement of Equivalent Units of Performance
(Weighted Average Method)

Particulars	*Units*	*Labour*		*Overhead*	
		%	*Eq. Unit*	*%*	*Eq. Unit*
Return Processed (200 + 825 - 125)	900	100	900	100	900
Closing Return-in-process	125	80	100	80	100
Total	***1,025***	***-***	***1,000***	***-***	***1,000***

Statement of Actual Cost Per Equivalent Unit

Elements	*Cost*	*Eq. Units*	*Cost Per Unit*
Labour	12,000 + 1,78,000 = 1,90,000	1,000	190.00
Overheads	5,000 + 90,000 = 95,000	1,000	95.00
Actual Cost Per Equivalent Unit			***285.00***

(b) Actual cost of return-in-process on March 31 = Equivalent units × Cost Per Unit
= 100 units × 285
= ***₹28,500***

(c) The standard cost per return = Labour cost per unit + OH cost per unit
= 5 hours × 40 + 5 hours × 20 OH cost per
= ***₹300 per unit***

(d) Variances:

Labour Rate Variance = AH × SR – AH × AR
= 4,000 hours × 40 – 1,78,000
= ***18,000 A***

Labour Efficiency Variance = SH × SR – AH × SR
= 950 units × 5 hrs × 40 - 4,000 hrs × 40
= ***30,000 F***

Overhead Volume Variance = AP × SR – BP × SR
= 950 × 100 – 980 × 100
= ***3,000 A***

Overhead Expenditure Variance = Budgeted OH – Actual OH
= 98,000 – 90,000
= ***8,000 F***

Working notes:

(a) Calculation of Equivalent Production during current month:

Production during current month = Total equivalent production – opening equivalent production
= 1,000 units – 50 units (200 × 25%) = ***950 units***

(b) Calculation of budgeted production for March:

Budgeted production for March = Budgeted OH ÷ OH per unit
= 98,000 ÷ 100 (5 hours × 20) = ***980 units***

Notes: All variances are calculated on the basis of the transactions placed during current month only.

QUESTION 3 (b)

A trader whose current sales is ₹4,20,000 per annum and an average collecting period of 30 days, wants to pursue a more liberal policy to improve sales. A study made by a management consultant reveals the following information:

Credit Policy	*Increase in Collection Period*	*Increase in Sales*	*Present default anticipated*
I	10 days	₹21,000	1.5%
II	30 days	₹52,500	3%
III	45 days	₹63,000	4%

The selling price per unit is ₹3. Average cost per unit is ₹2.25 and variable cost per unit is ₹2. The current bad debts loss is 1%. Required return on additional investment is 20%. Assume a 360 days year.

Which of the above policies would you recommend for adoption?

[(8 Marks) Similar to many questions of Chapter 4 FM]

Answer

Statement of Evaluation

Particulars	*Policies*			
	Present	*I*	*II*	*III*
No of units to be sold	1,40,000	1,47,000	1,57,500	1,61,000
1. Increase in profit before cost of credit:				
Annual credit sales	4,20,000	4,41,000	4,72,500	4,83,000
Less: Variable cost @ ₹2 per unit	2,80,000	2,94,000	3,15,000	3,22,000
Less: Fixed Cost 1,40,000 units (2.25 - 2)	35,000	35,000	35,000	35,000
Profit before cost of credit	1,05,000	1,12,000	1,22,500	1,26,000
Incremental profit	-	*7,000*	*17,500*	*21,000*
2. Incremental bad debts:				
Bad debts	4,200	6,615	14,175	19,320
Incremental bad debts	-	*2,415*	*9,975*	*15,120*
3. Incremental cost of investment in debtors:				
Average investment in debtors (WN)	26,250	36,556	58,333	74,375
Incremental investment in debtors	-	10,306	32,083	48,125
Return on additional investment @ 20%		*2,061*	*6,417*	*9,625*
4. Incremental Benefit:				
Incremental Profit before cost of credit	-	7,000	17,500	21,000
Less: Incremental bad debts	-	2,415	9,975	15,120
Less: Return on additional investment	-	2,061	6,417	9,625
Incremental Benefit	-	*2,524*	*1,108*	*(3,745)*

Conclusion: Policy I is better having higher incremental benefit.

QUESTION 4 (a)

A factory producing article A also produces a by-product B which is further processed into finished product.

The joint costs of manufacture are given below:

Material	₹5,000
Labour	₹3,000
Overheads	₹2,000
	₹10,000

Subsequent costs are given below:

	A	*B*
Material	₹3,000	₹1,500
Labour	₹1,400	₹1,000
Overheads	₹600	₹500
	₹5,000	***₹3,000***

Selling Price:

Product A	₹16,000
Product B	₹8,000

Estimated profits on selling prices:

Product A	25%
Product B	20%

Assume that selling and distribution expenses are in proportion of sales prices. Show how you would apportion joint costs of manufacture and prepare a statement showing cost of production of A and B.

[(8 Marks) Copy paste BQ 15 of Chapter 9 Cost]

Answer

(1) Statement Showing Apportionment of Joint Cost

Particulars	*Product A*	*Product B*
Sales value	16,000	8,000
Less: Profit @ 25% and 20%	4,000	1,600
Less: Selling expenses in sales ratio (16 : 8)	267	133
Less: Subsequent cost	5,000	3,000
Joint cost	***6,733***	***3,267***

(2) Statement Showing Cost of Production

Particulars	*Product A*	*Product B*
Joint Cost	6,733	3,267
Add: Subsequent Cost	5,000	3,000
Cost of production	***11,733***	***6,267***

Working notes:

Calculation of selling and distribution expenses:

Selling and distribution expenses = Combined sales – Combined profit – Combined subsequent cost – Joint cost

= (16,000 + 8,000) – (16,000 × 25% + 8,000 × 20%) – (5,000 + 3,000) – 10,000

= ***400***

QUESTION 4 (b)

Given below are the data on a capital project 'C':

Cost of the project	₹2,28,400
Useful life	4 years
Salvage value	zero
Internal rate of return	15%
Profitability index	1.0417

You are required to calculate:

(i) Annual cash flow
(ii) Cost of capital
(iii) Net present value (NPV)
(iv) Discounted Payback period

Table of discount factor:

Discount Factor	*Years*			
	1	*2*	*3*	*4*
15%	0.869	0.756	0.658	0.572
14%	0.877	0.769	0.675	0.592
13%	0.885	0.783	0.693	0.613
12%	0.893	0.797	0.712	0.636

[(8 Marks) Same as PYQ 1, 19 and 23 of Chapter 7 FM]

Answer

(i) Annual cash flow:

At IRR,

Present value of inflows = Present value of outflows

Present value of outflows = Annual cash inflow × Cumulative discount factor @ IRR for 4 years

2,28,400 = Annual cash inflow × 2.855

Annual cash Inflow = ***₹80,000***

(ii) Cost of Capital:

Present value of inflows = Annual cash inflow × Cumulative discount factor @ Cost of Capital for 4 years

Cost of project + NPV = 80,000 × Cumulative discount factor @ Cost of Capital for 4 years

2,28,400 + 9,524 = 80,000 × $PVIFA_4$

PVIFA 4 years = 2.974

Cost of capital = ***13%***

Alternatively

Cum DF @ cost of capital for 4 years = $\frac{\text{Present Value of Inflows}}{\text{Annual Inflows}}$

= $\frac{2,37,924}{80,000}$ = 2.974

Cost of capital = ***13%***

From the discount factor table, at discount rate of 12%, the cumulative discount factor for four years is 2.974 (0.885 + 0.783 + 0.693 + 0.613)

(iii) Net Present Value (NPV):

NPV = Cost of project × (PI - 1)

NPV = 2,28,400 × (1.0417 - 1) = ***₹9,524***

(iv) Discounted Payback Period:

$$\text{Discounted Payback Period} = \text{LLY} + \frac{\text{Initial Outflows} - \text{Cumulative PV upto LLY}}{\text{PV of inflows of ULY}}$$

$$= 3 \text{ years} + \frac{2,28,400 - 1,88,880}{49,040} = \textbf{3.806 years}$$

Working notes:

Calculation of PV of cash inflow cumulative PV of cash inflow:

Years	*PV of cash inflow*	*Cumulative PV of cash inflow*
1	80,000 × 0.885 = 70,800	70,800
2	80,000 × 0.783 = 62,640	1,33,440
3	80,000 × 0.693 = 55,440	1,88,880
4	80,000 × 0.613 = 49,040	2,37,920

QUESTION 5

(a) State the difference between cost control and cost reduction.

(b) Write treatment of items associated with purchase of materials:

- ***(i)*** Cash discount
- ***(ii)*** Subsidy / Grant / Incentives
- ***(iii)*** VAT or State Sales Tax
- ***(iv)*** Commission brokerage paid

(c) Distinguish between operating lease and finance lease.

(d) Describe the three principles relating to selection of marketable securities.

[(4 × 4 = 16 Marks) As discussed in theory class]

Answer

(a) Difference between Cost Control and Cost Reduction:

S.N.	*Cost Control*	*Cost Reduction*
1	Cost control aims at maintaining the costs in accordance with the established standards.	Cost reduction is concerned with reducing costs. It challenges all standards and endeavours to better them continuously.
2	Cost control seeks to attain lowest possible cost under existing conditions.	Cost reduction recognizes no condition as permanent, since a change will result in lower cost.
3	In case of cost control, emphasis is on past and present.	In case of cost reduction it is on present and future.
4	Cost control is a preventive function.	Cost reduction is a corrective function. It operates even when an efficient cost control system exists.
5	Cost control ends when targets are achieved.	Cost reduction has no visible end.

(b) Treatment of items associated with purchase of materials:

S.N.	Items	Treatment
i	Cash Discount	Cash discount is not deducted from the purchase price.
ii	Subsidy / Grant / Incentives	Any subsidy / grant / incentive received from the Government or from other sources deducted from the cost of purchase.
iii	VAT or State Sales Tax	VAT / State Sales Tax is paid on inter-state sale and collected from buyers. It is excluded from the cost of purchase if credit for the same is available. Unless mentioned specifically it should not form part of purchase.
iv	Commission or Brokerage paid	Commission or brokerage paid is added with the cost of purchase.

(c) Distinguish between Operating Lease and Finance Lease:

S.N.	Operating Lease	Finance Lease
1	The lessee is only provided the use of the asset for a certain time. Risk incident to ownership belong wholly to the lessor.	The risk and reward incident to ownership are passed on to the lessee. The lessor only remains legal owner of the asset.
2	The lessor bears the risk of obsolescence.	The lessee bears the risk of obsolescence.
3	As the lessor does not have difficulty in leasing the same asset to other willing lessor, the lease is kept cancelable by the lessor.	The lessor is interested in rentals and not in asset. He must get his principal back along with interest. Therefore, the lease is non-cancelable by either party.
4	Usually, the lessor bears cost of repairs, maintenance or operations.	The lessor enters into the transaction only as financer. He does not bear cost of repairs, maintenance or operations.
5	The lease is usually non-payout, since the lessor expects to lease the same asset over and over again several users.	The lease is usually full payout, that is, the single lease repays the cost of the asset together with the interest.

(d) Three principles relating to selection of marketable securities:

1. ***Safety:*** Return and risks go hand in hand. As the objective in his investment ensuring liquidity, minimum risk is the criterion of selection.
2. ***Maturity:*** Matching of maturity and forecasted cash needs is essential. Prices of long term securities fluctuate more with changes in interest rates and are therefore, more risky.
3. ***Marketability:*** It refers to the convenience, speed and cost at which a security canbe converted into cash. If the security canbe sold quickly without loss of time and price it is highly liquid or marketable.

QUESTION 6 (a) (i)

The M-Tech manufacturing company is presently evaluating two possible processes for the manufacture of a toy. The following information is available:

Particulars	Process A	Process B
Variable cost per unit	₹12	₹14
Sales price per unit	₹20	₹20
Total fixed cost per year	₹30,00,000	₹21,00,000
Capacity (in units)	4,30,000	5,00,000
Anticipated sales (next year, in units)	4,00,000	4,00,000

Suggest:

1. Which process should be chosen?
2. Would you change your answer as given above, if you were informed that the capacities of the two processes are as follows:

A 6,00,000 units; B 5,00,000 units? Why?

[(4 Marks) Copy paste BQ 22 and 29 of Chapter 12 Cost]

Answer

1. Cost BEP or Cost Indifference Point:

$$= \frac{\text{Difference in FC}}{\text{Difference in VC per unit}}$$

$$= \frac{30,00,000 - 21,00,000}{14 - 2} = \textbf{4,50,000 units}$$

If expected activity level is less than 4,50,000 units then Process B should be selected having lower cost than Process A. Since anticipated sales for next year is 4,00,000 units, Process B Should be chosen.

2. Suggestion in case of revised capacity:

Answer will remain same due to no change in anticipated sales quantity. Anticipated sales quantity is 4,00,000 and this sale lies within capacity of Process B but if capacity of Process B goes down lower than anticipated sales quantity then we have to switch to Process A.

Note: Student may prepare statement of profit under both process and can select option providing higher profit.

QUESTION 6 (b)

The X Company has following capital structure at 31st March, 20015, which is considered to be optimum:

14% debenture	₹3,00,000
11% preference share capital	₹1,00,000
Equity share capital (1,00,000 shares)	₹16,00,000

The company's share has a current market price of ₹23..60 per share. The expected dividend per share in next year is 50 percent of the 2015 EPS. The EPS of last 10 years is as follows. The past trends are expected to continue:

Year	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***2012***	***2013***	***2015***	***2015***
EPS (₹)	1.00	1.10	1.21	1..33	1.46	1.61	1.82	1.95	2.15	2.36

The company issued new debentures carrying 16% rate of interest and the current market price of debenture is ₹96.

Preference shares ₹9.20 (with dividend of ₹1.1 per share) were also issued. The company is in 50% tax bracket.

(i) Calculate the after tax cost of

(a) New Debts, ***(b)*** New Preference Share, and ***(c)*** New Equity Share (assuming new equity from retained earnings).

(ii) Calculate the marginal cost of capital when no new share was issued.

(iii) How much can be spent for capital investment before new ordinary shares must be sold? Assuming that retained earnings for next year's investment are 50% of 2015.

(iv) What will be marginal cost of capital when the fund exceeds the amount calculated in ***(iii)***, assuming new equity is issued at ₹20 per share?

[(8 Marks) Copy paste PYQ 5 of Chapter 8 FM]

Answer

Assumption: The present capital structure is optimum. Hence, it will be followed in future.

Existing Capital Structure Analysis

Name of source	*Amount (₹)*	*Proportion*
14% debentures	3,00,000	0.15
11% Preference	1,00,000	0.05
Equity share capital	16,00,000	0.80
Total	***20,00,000***	***1.00***

(i) (a) After tax cost of new debt

$$K_d = \frac{I(1-t)}{NP} \times 100 = \frac{16(1-.50)}{96} \times 100 = \textbf{8.33\%}$$

(b) After tax cost of new preference shares

$$K_p = \frac{PD}{NP} \times 100 = \frac{1.10}{9.20} \times 100 = \textbf{11.96\%}$$

(c) Cost of new equity or cost of retained earnings

$$K_r = \frac{D_1}{P_0(old)} + g = \frac{1.18}{23.60} + 0.10 = \textbf{15\%}$$

(ii) MCC (K_o) when no new equity share was issued:

$$= K_dW_d + K_pW_p + K_rW_r$$
$$= 8.33\% \times .15 + 11.96\% \times .05 + 15\% \times .80 = \textbf{13.85\%}$$

(iii) The company can pay the following amount before issue of new shares:

Equity (retained earnings in this case) = 80% of the total capital

Therefore, investment before new issue = $\frac{1,18,000}{80\%}$ = **₹1,47,500**

Retained earnings = ₹2.36 × 50% × 1,00,000 = **₹1,18,000**

(iv) MCC (K_o) when funds exceeds ₹1,18000

$$= K_dW_d + K_pW_p + K_eW_e$$
$$= 8.33\% \times .15 + 11.96\% \times .05 + 15.90\% \times .80 = \textbf{14.57\%}$$

If the company pay more than ₹1,18,000, it will have to issue new shares. The cost of new issue of ordinary share is:

$$K_e = \frac{D_1}{P_0(new)} + g = \frac{1.18}{20} + 0.10 = \textbf{15.90\%}$$

WN: Calculation of growth:

Growth from year 2006 to 2007 = (1.10 – 1.00) ÷ 1.00 = ***10%***

Same rate of growth is found in future years

QUESTION 7

Answer any four of the followings:

(a) What is Cost plus Contract? What are its advantages?

(b) Narrate the objectives of Cost Accounting.

(c) State, which of the following would result in Inflow/ Outflow of Funds, if the funds were defined as Working Capital.

1. Purchase of a Fixed Asset on credit of two months.
2. Sale of a Fixed Asset (Book Value ₹ 8,000) at a loss of ₹7,000.
3. Payment of Final Dividend already declared.
4. Writing off Bad Debts against a Provision for Doubtful Debts.

(d) State the principles that should be followed while designing the capital structure of a Company.

(e) Explain what do you mean by:

1. Leveraged Lease
2. Profit Centres.

[(4 × 5 = 20 Marks) As discussed in theory class]

Answer

(a) Cost plus contract:

Under cost plus contract, the contract price is ascertained by adding a percentage of profit to the total cost of the work. Such types of contract are entered into when it is not possible to estimate the contract cost with reasonable accuracy due to unstable condition of factors that affect the cost of materials, labour services, etc.

Advantages:

1. The contractor is assured of a fixed percentage of profit. There is no risk of incurring any loss on contract.
2. It is useful specially when the work to be done is not definitely fixed at the time of making the estimate.
3. Contractee can assure himself about 'the cost of the contract' as he is empowered to examine the books and documents of the contractor to ascertain the veracity of the cost of contract.

(b) Objectives of cost accounting:

1. Ascertainment of cost.
2. Determination of selling price.
3. Cost control.
4. Cost reduction.
5. Ascertainment of profit of each activity.
6. Assisting management in decision making.

(c) Inflow/ Outflow of Funds, if the funds were defined as Working Capital:

1. ***Purchase of a Fixed Asset on credit of two months:***

   Decrease in working capital / Outflow of fund.

2. ***Sale of a Fixed Asset (Book Value ₹8,000) at a loss of ₹7,000:***

   Increase in working capital / Inflow of fund by ₹1,000.

3. ***Payment of Final Dividend already declared:***

   No change in working capital / No flow (assuming current liabilities includes proposed dividend)

4. Writing off Bad Debts against a Provision for Doubtful Debts:

No change in working capital / No flow (assuming current liabilities includes provision for doubtful debts)

(d) While choosing or designing a suitable capital structure, certain fundamental principles should be kept in mind, which are discussed below:

(1) Cost Principle:

According to this principle, an ideal pattern or capital structure is one that minimize cost of capital and maximises earning per share (EPS).

(2) Risk Principle:

According to this principle, reliance is placed more on common equity for financing capital requirements than excessive use of debt. Use of more and more debt means higher commitment in form of interest payout. This would lead to erosion of shareholder's value in unfavourable business situation.

There are two risks associated with this principle i.e. (1) Business Risk (risk because of environment in which the firm has to operate and is represented by the variability in EBIT due to change in revenue and expenses), and (2) Financial Risk (it is additional risk borne by the shareholder's when a firm uses debt in addition to equity financing).

(3) Control Principle:

While designing a capital structure, the finance manager may also keep in mind that existing management control and ownership remains undisturbed. Issue of new equity will dilute existing control pattern and also involves higher cost.

(4) Flexibility Principle:

It means management choose such a combination of sources of financing which it find easier to adjust (increase or decrease in funds) according to changes in need of funds in future too.

(5) Other Consideration:

Other factors such as nature of industry, timing of issue and competition in industry should also be considered.

(e) Leveraged Lease and Profit Centres:

(1) Leveraged Lease:

Under this lease, a third party is involved beside lessor and lessee. The lessor borrows a part of the purchase cost (say 80%) of the asset from the third party. i.e., lender and asset so purchased is held as security against loan. The lender is paid off from the lease rentals directly by the lessee and surplus after meeting the claims of the lender goes to the lessor. The lessor is entitled to claim depreciation allowance.

(2) Profit Centres:

Profit centres are the part of a business which is accountable for both cost and revenue. These are responsible for generating and maximizing profits. Performance of these centres is measured with the volume of profit it earns.