

CA Intermediate Paper-8 Financial Management

Nov-19 Exam Paper with Suggested Answers



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(Disclaimer: Though every care has been taken to make these answer error free but these answers are prepared in a short period of time if you find any error please inform me at abovementioned contact details.)

Question 1 (a)

Following information has been gathered from the books of Tram Ltd. the equity share of which is trading in the stock market at 14.

Particulars	Amount (Rs.)
Equity Share Capital (face value Rs. 10)	10,00,000
10% preference Shares	2,00,000
Reserves	8,00,000
10% Debentures	6,00,000
Profit before Interest and Tax for the year	4,00,000
Interest	60,000
Profit after Tax for the year	2,40,000

Calculate the following:

- (i) Return on Capital Employed
- (ii) Earnings per share
- (iii) PE ratio

(5 Marks, Nov-19)

Answer 1(a)

Part (i)

$$\text{Return on Capital Employed} = \frac{\text{EBIT}}{\text{Average Capital Employed}} = \frac{400000}{2600000} = 15.38\%$$

$$\text{Capital employed} = 1000000 + 200000 + 800000 + 600000 = 2600000$$

Part (ii)

$$\text{Earning Per Share} = \frac{\text{earning available to equity shareholders}}{\text{number of equity shares}} = \frac{240000 - 20000}{100000} = 2.2$$

Part (iii)

$$\text{Price earning ratio} = \frac{\text{MPS}}{\text{EPS}} = \frac{14}{2.2} = \text{Rs. } 6.36$$

Question 1 (b)

Door Ltd. is considering an investment of Rs. 4,00,000. This investment is expected to generate substantial cash inflows over the next five years. Unfortunately the annual cash flows from this investment is uncertain, but the following probability distribution has been established.

Annual Cash Flow (Rs.)	Probability
50,000	0.3
1,00,000	0.3
1,50,000	0.4

At the end of its 5 years life, the investment is expected to have a residual value of Rs. 40,000.

The cost of capital is 5%.

- (i) Calculate NPV under the three different scenarios.
- (ii) Calculate Expected Net Present Value
- (iii) Advise Door Ltd. on whether the investment is to be undertaken.

Year	1	2	3	4	5
DF @ 5%	0.952	0.907	0.864	0.823	0.784

(5 Marks, Nov-19)

Answer 1(b)

Part (i)

Net Present Value

= Annual inflow x PVAF (5%, 5 years) – Initial Investment + Residual value x PVF (5%, 5th year)

$$\text{NPV 1} = 50000 \times 4.33 - 400000 + 40000 \times 0.784 = -152140$$

$$\text{NPV 2} = 100000 \times 4.33 - 400000 + 40000 \times 0.784 = 64360$$

$$\text{NPV 1} = 150000 \times 4.33 - 400000 + 40000 \times 0.784 = 280860$$

Part (ii)

Expected Net Present Value =

$$-152140 \times 0.3 + 64360 \times 0.3 + 280860 \times 0.4 = 86010$$

Part (iii)

Door Ltd. should make this investment because expected NPV is positive.

Question 1 (c)

Following figures and information were extracted from the company A Ltd.

Earnings of the company	Rs.10,00,000
Dividend paid	Rs. 6,00,000
No. of shares outstanding	2,00,000
Price earnings Ratio	10
Rate of return on investment	20%

You are required to calculate:

- (i) Current Market price of the share.
- (ii) Capitalisation rate of its risk class.
- (iii) What should be the optimum payout ratio?
- (iv) What should be the market price per share at optimal pay-out ratio? (use Walter's Model)

(5 Marks, Nov-19)

Answer 1(c)

Part (i)

Current market price per share :

$$K_e = \frac{1}{PE} = \frac{1}{10} = 10\%$$

$$P = \frac{\text{Dividend per share} + \frac{r}{K_e} (\text{Earning per share} - \text{Dividend per share})}{K_e}$$

$$P = \frac{3 + \frac{0.20}{0.10} \times (5 - 3)}{0.10} = 70$$

Alternatively one can use PE ratio approach in place of Walter's model. In that case :

$$MPS = EPS \times PE = 5 \times 10 = Rs.50$$

Part (ii)

$$\text{Capital ization rate} = K_e = \frac{1}{PE} = \frac{1}{10} = 10\%$$

Part (iii)

In this question Rate of return on investment is more than the cost of equity hence it is better to retain profits. Hence optimum payout ratio is 0%.

Part (iv)

$$P = \frac{0 + \frac{0.20}{0.10} \times (5 - 0)}{0.10} = 100$$

Question 1 (d)

A company has Rs. 1,00,000 available for investment and has identified the following four investments in which to invest.

Project	Investment (Rs.)	NPV (Rs.)
C	40,000	20,000
D	1,00,000	35,000
E	50,000	24,000
F	60,000	18,000

You are required to optimize the returns from a package of projects within the capital spending limit if

- (i) The projects are independent of each other and are divisible.
- (ii) The projects are not divisible.

(5 Marks, Nov-19)

Answer 1(d)

Project	Investment	Present Value of Inflows = Investment + NPV	Profitability Index = PV_i/PV_0	Rank
C	40000	60000	1.50	1
D	100000	135000	1.35	3
E	50000	74000	1.48	2
F	60000	78000	1.32	4

Part (i)

If projects are divisible:

Here one should allot funds as per PI ranking only

C = 40000, E = 50000, D = 10000

Part (ii)

If projects are indivisible:

Here one should try various combinations and select the one which has highest total NPV

C & E : Total NPV = 20000+24000 = 44000

C & F : Total NPV = 20000+18000 = 38000

D only : Total NPV = 35000

Best combination is C & E. Idle fund of Rs.10000 may be investment in short term securities.

Question 2

The Balance Sheet of Gitashree Ltd. is given below:

Liabilities	Rs.
Shareholders' fund	
Equity share capital of Rs. 10 each	Rs. 1,80,000
Retained earnings	Rs. 60,000
Non-current liabilities 10% debt	2,40,000
Current liabilities	1,20,000
	6,00,000
Assets	
Fixed Assets	4,50,000
Current Assets	1,50,000
	6,00,000

The company's total asset turnover ratio is 4. Its fixed operating cost is Rs. 2,00,000 and its variable operating cost ratio is 60%. The income tax rate is 30%.

Calculate:

(i)

(a) Degree of Operating leverage.

(b) Degree of Financial leverage.

(c) Degree of Combined leverage.

(ii) Find out EBIT if EPS is (a) Rs. 1 (b) Rs. 2 and (c) Rs. 0.

(10 Marks, Nov-19)

Answer 2

Working notes:

$$1) \text{ Total asset turnover ratio} = \frac{\text{Sales}}{\text{Total Assets}} \gg \gg 4 = \frac{\text{Sales}}{600000}$$

Sales = 2400000

$$2) \text{ Contribution} = \text{Sales} \times \text{PV} = 2400000 \times 40\% = 960000$$

$$3) \text{ EBIT} = \text{Contribution} - \text{Fixed Cost} = 960000 - 200000 = 760000$$

$$4) \text{ Interest} = \text{Debt} \times r\% = 240000 \times 10\% = 24000$$

Part (i)

$$\begin{aligned} \text{Degree of Operating Leverage} &= \frac{\text{Contribution}}{\text{Contribution} - \text{Fixed Cost}} \\ &= \frac{960000}{960000 - 200000} = 1.26 \end{aligned}$$

$$\text{Degree of Financial Leverage} = \frac{EBIT}{EBIT - \text{Interest}} = \frac{760000}{760000 - 24000} = 1.03$$

$$\begin{aligned} \text{Degree of Combined Leverage} &= \frac{\text{Contribution}}{\text{Contribution} - \text{Fixed Cost} - \text{Interest}} \\ &= \frac{960000}{960000 - 200000 - 24000} = 1.304 \end{aligned}$$

Part (ii)

$$EPS = \frac{(EBIT - \text{Interest})(1 - t)}{\text{Number of equity shares}}$$

$$\text{Hence } EBIT = \frac{EPS \times \text{number of shares}}{(1 - t)} + \text{Interest}$$

$$(a) EBIT = \frac{1 \times 18000}{0.70} + 24000 = 49714$$

$$(b) EBIT = \frac{2 \times 18000}{0.70} + 24000 = 75429$$

$$(c) EBIT = \frac{0 \times 18000}{0.70} + 24000 = 24000$$

Question 3

Slide Ltd. is preparing a cash flow forecast for the three months period from January to the end of March. The following sales volumes have been forecasted:

	December	January	February	March	April
Sales (units)	1800	1875	1950	2100	2250

Selling price per unit is Rs. 600. Sales are all on one month credit. Production of goods for sale takes place one month before sales. Each unit produced requires two units of raw material costing Rs. 150 per unit. No raw material inventory is held. Raw materials purchases are on one month credit. Variable overheads and wages equal to Rs. 100 per unit are incurred during production and paid in the month of production. The opening cash balance on 1st January is expected to be Rs.35,000. A long term loan of Rs. 2,00,000 is expected to be received in the month of March. A machine costing Rs. 3,00,000 will be purchased in March.

- Prepare a cash budget for the months of January, February and March and calculate the cash balance at the end of each month in the three months period.
- Calculate the forecast current ratio at the end of the three months period.

(10 Marks, Nov-19)

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Answer 3

Working note:

	Dec	Jan	Feb	Mar	April
Sale (units)	1800	1875	1950	2100	2250
Sale	1080000	1125000	1170000	1260000	1350000
Debtors	1080000	1125000	1170000	1260000	1350000
Cash from Debtos		1080000	1125000	1170000	
Production (units)	1875	1950	2100	2250	
Raw Material Consumed	562500	585000	630000	675000	
Creditors	562500	585000	630000	675000	
Payment to Creditors		562500	585000	630000	
Variable Overheads & Wages	187500	195000	210000	225000	
Payment of VO & Wages		195000	210000	225000	

Slide Limited
Cash Budget
(January to March)

Particulars	Jan	Feb	Mar
Opening Balance	35000	357500	687500
Cash from Debtos	1080000	1125000	1170000
Long Term Loan			200000
Total	1115000	1482500	2057500
Payment to Creditors	562500	585000	630000
Payment of VO & Wages	195000	210000	225000
Buy Machine			300000
Total	757500	795000	1155000
Closing Balance	357500	687500	902500

Current Ratios:

Particulars	Jan	Feb	Mar
Cash	357500	687500	902500
Debtors	1125000	1170000	1260000
Inventory @400	780000	840000	900000
Current Assets	2262500	2697500	3062500
Creditors	585000	630000	675000
Current Liabilities	585000	630000	675000
Current Ratio	3.87	4.28	4.54

About Faculty



Academic:

- Chartered Accountant (ICAI, Year 1999): Got All India Rank 10 in CA Foundation and marks equivalent to AIR 23 in CA Final.
- Diploma in Information Systems Audit (ICAI, 2005)
- Chartered Financial Analyst (CFAI, USA, 2008): First CFA charter holder of Central India
- Registered Valuer (IBBI, 2019): Passed in first attempt with 80% score.

Experience:

- Teaching CA Final SFM, CA Inter Law and Finance since year 1999 at NPA, Indore
- Teaching CFA students since year 2007
- Faculty at **ICAI** for **PAN INDIA** Live Virtual Classes
- Faculty at ICAI RVO for registered valuer course
- Faculty at Divya Jyoti Foundation for registered valuer course
- Practicing as a Registered Valuer and as a Chartered Accountant

Question 4

Loft Ltd. is considering an investment in new technology that will reduce operating costs through increasing efficiency. The new technology will cost Rs. 5,00,000 and have a four year life at the end of which it will have a residual value of Rs. 50,000.

An annual license fee of Rs. 52,000 is payable to operate the machine. The purchase can be financed by 10% loan payable in equal instalments at the end of each of four years. The depreciation is to be charged as per reducing balance method. The rate of depreciation is 25% per annum.

Alternatively Loft Ltd. could lease the new technology. The Company would pay four annual lease rentals of Rs. 1,90,000 per year. The annual lease rentals include the cost of license fee. Tax rate is 30%. Compute the incremental cash flows under each option. What would be the appropriate rate at which these cash flows have to be discounted? Discount the incremental cash flows under each option and decide which option is better — buy or lease?

Year	1	2	3	4
DF @ 7%	0.935	0.873	0.816	0.763
DF @ 10%	0.909	0.826	0.751	0.683

(10 Marks, Nov-19)**Answer 4****Loan Option****Working Note 1**

$\text{Loan amount} = \text{Installment} \times \text{PVAF}(r\%, n)$

$500000 = \text{Installment} \times \text{PVAF}(10\%, 4)$

$500000 = \text{Installment} \times 3.170$

$\text{Installment} = 157735$

Working Note 2

Loan amortization table

Year	Interest	Principal	Balance
1	50,000	1,07,735	3,92,265
2	39,226	1,18,509	2,73,756
3	27,376	1,30,360	1,43,396
4	14,340	1,43,396	0

Working Note 3

Year	Depreciation
1	1,25,000
2	93,750
3	70,313
4	52,734
WDV	1,58,203

Working Note 4

Discounting Rate = $r\% \times (1-t) = 10\% \times 0.7 = 7\%$
(applicable for both loan and lease option)

Step 1: Annual Cash Flows

Year	Installment	Tax benefit		Fees x (1-t)	Net Cash Flow	Present Value@7%
		Depreciation	Interest			
1	-157735	37500	15000	-36400	-141635	-1,32,369
2	-157735	28125	11768	-36400	-154242	-1,34,721
3	-157735	21094	8213	-36400	-164829	-1,34,549
4	-157735	15820	4302	-36400	-174013	-1,32,754
						-5,34,393

Step 2: Terminal Cash flow

Particulars	Amount
Salvage Value	50000
Tax benefit on Capital Loss (WDV-Salvage) x t = (158203-50000) x 0.3	32461
Total Inflow	82460
Present Value Factor (7%, 4 th year)	X0.763
Present Value	62,918

Step 3: NPV = -534393+62918 = -4,71,475

Lease Option**Step 1:**

Lease Rent x PVAF($r\%$, n) = -190000 x PVAF(7%, 4)
= -190000 x 3.387 = -643530

Step 2:

Tax benefit on lease Rent x PVAF($r\%$, n)
= 57000 x PVAF(7%, 4) = 57000 x 3.387 = 193059

Step 3:

Net Present Value = -643530 + 193059 = -450471

Decision

As the cost of lease option is less than that of loan hence "**Lease is better**".

Question 5

A Company wants to raise additional finance of Rs. 5 crore in the next year. The company expects to retain Rs. 1 crore earning next year. Further details are as follows:

- The amount will be raised by equity and debt in the ratio of 3:1.
- The additional issue of equity shares will result in price per share being fixed at 25.
- The debt capital raised by way of term loan will cost 10% for the first Rs. 75 lakh and 12% for the next Rs. 50 lakh.

- (iv) The net expected dividend on equity shares is Rs. 2.00 per share. The dividend is expected to grow at the rate of 5%.
 (v) Income tax rate is 25%.

You are required:

- (a) To determine the amount of equity and debt for raising additional finance.
 (b) To determine the cost of retained earnings and cost of equity.
 (c) To compute the overall weighted average cost of additional finance after tax.

(10 Marks, Nov-19)**Answer 5**

Assumption: amount of Rs.5 crores mentioned in the question includes retained earnings of Rs.1 crore also.

Part (a)

$$\text{Equity} = 5 \text{ cr.} \times \frac{3}{4} = 3.75 \text{ crore}$$

$$\text{Debt} = 5 \text{ cr.} \times \frac{1}{4} = 1.25 \text{ crore}$$

Part (b)

$$K_{d1} = 10\% \times (1 - 0.25) = 7.5\%$$

$$K_{d2} = 12\% \times (1 - 0.25) = 9\%$$

$$K_d(\text{average}) = \frac{7.5 \times 75 + 9 \times 50}{125} = 8.1\%$$

Part (c)

Cost of retained earning = Cost of equity =

$$\frac{D_1}{P_0} + g = \frac{2}{25} + .05 = 13\%$$

Part (d)

$$WACC = \frac{8.1 \times 1.25 + 13 \times 3.75}{5} = 11.78\%$$

(as the cost of equity and cost of retained earnings is same hence we need not to assign separate weight to them and we can simply combine their weights)

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Question 6

- (a) Briefly explain the three finance function decisions. **(3 Marks, Nov-19)**
- (b) Explain the steps while using the equivalent annualized criterion. **(3 Marks, Nov-19)**
- (c) Explain the significance of Cost of Capital. **(4 Marks, Nov-19)**

OR

Briefly describe any four sources of short term finance. **(4 Marks, Nov-19)**

Answer 6(a)

The financial manager is required to look into the financial implications of any decision in the firm. Thus all decisions involving management of funds comes under the preview of the finance manager. Some of these have been listed below:

Decision regarding capital structure: Once the requirement of funds has been estimated, a decision regarding various sources from where these funds would be raised has to be taken.

In deciding the capital structure, he must consider the risk, cost & control consideration for each source of finance. He also has to maintain a proper balance between long-term funds and short-term funds.

Investment decision: The investment of funds in a project has to be made after careful assessment of the various projects through capital budgeting. A part of long term funds is also to be kept for financing the working capital requirements.

Dividend decision: The finance manager is also concerned with the decision to pay or declare a dividend. He has to assist the top management in deciding as to what amount of dividend should be paid to the shareholders and what amount should be retained in the business itself.

To arrive at a dividend decision, a large number of considerations like the trend of earnings, the effect on share market prices, the requirement of funds for future growth, the cash flow situation, the tax position of share-holders, etc., are to be kept in mind. Ultimately his decision should result in maximization of wealth of the company.

Answer 6(b)

Equivalent Annualization Criterion or Equivalent Net Present Value Method (ENPV):

- 1) If two mutually exclusive projects have unequal lives then it is not fair to take decision just on the basis of their NPVs
- 2) In this case one can either use common time horizon method of ENPV method.
- 3) Common time horizon method is lengthy to use, especially when life of one project is not equal to double the life of other one.
- 4) To use ENPV method first one should calculate NPV of both projects
- 5) Then calculate ENPV using this formula :

$$ENPV = \frac{NPV}{\text{Present Value Annuity Factor}}$$

- 6) Select the project which has higher ENPV.

Answer 6(c)

Significance of Cost of Capital: Cost of capital is used as follows:

- 1) Financing Decision: If more than one capital structures are given then one can choose the capital structure which has lower cost of capital
- 2) Investment Decision: weighted average cost of capital is used to calculate net present value of a project and if NPV is positive then the proposal may be accepted. WACC can also be compared to IRR. If IRR is equal to or more than WACC then only the project is accepted.

Four sources of short term sources of finance:

- 1) Cash Credit Limit:
 - a. it is available against hypothecation of stock.
 - b. Limit amount may be say 70% of the amount of stock.

- c. Monthly stock statement is submitted. On the basis of which drawing power for next month is decided by the bank.
- d. Interest is charged only of amount utilized and not on whole sanctioned limit

2) Book Debts Limit:

- a. It is same as CC limit except it is given against hypothecation of debtors
- b. Limit amount is hardly 50% of the amount of debtors
- c. Given by bank only to borrower with good reputation

3) Bank Overdraft:

- a. Given against Fixed Deposit of the same bank.
- b. Upto 90% of the limit may be given.
- c. Rate of interest is usually 2% higher than the rate of FD
- d. Limit is sanction on the same day of application.

4) Bill Discounting:

Usance (time) bills maturing at a future date or sight are discounted by the banks for approved parties. When a bill is discounted, the borrower is paid the present worth. The bankers, however, collect the full amounts on maturity. The difference between these two amounts represents earnings of the bankers for the period. This item of income is called 'discount'.

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