Paper-12: FINANCIAL MANAGEMENT & INTERNATIONAL FINANCE

Time Allowed: 3 Hours   **Full Marks: 100**

The figures in the margin on the right side indicate full marks.
Answer Question No. 1 from Part A which is compulsory and any five questions from Part B.
Working notes should form a part of the answer
"Wherever necessary, suitable assumptions should be made and indicated in answers by the candidates"

PART A (25 Marks)

Question.1
(a) In each of the cases given below, one out of four answers is correct. Indicate the correct answer (= 1 mark) and give workings/reasons briefly in support of your answer (= 1 mark)

[2 × 8]

   (i)   A company issues a new 15 per cent debentures of ₹ 1,000 face value to be redeemed after 10 years. The debenture is expected to be sold at 5 per cent discount. It will involve floatation costs of 2.5 per cent of face value. The company's tax rate is 35 per cent. The cost of debt using short-cut method would be —
          A. 10.9%;
          B. 10.21%;
          C. 10.44%;
          D. 10.76%.

   (ii)   If the value of a Malaysian Ringgit ($/MR) was 0.2632, and the value of an Indian rupee ($/₹) was 0.02212. The value of a Malaysian Ringgit in terms of Indian rupee will be —
          A. 10.21
          B. 5.90
          C. 11.90
          D. None of the above.

   (iii) Cactus Limited paid a dividend of ₹ 5 per share for 2013-14. The company follows a fixed dividend payout ratio of 60%. The company earns a return of 20% on its investment. The cost of capital to the company is 14%. What would be the expected market price of its share, using the Walter Model?
          A. ₹ 69.69;
          B. ₹ 50.50;
          C. ₹ 60.69;
          D. ₹ 70.10.

   (iv)   A project has an equity beta of 1.2 and is going to be financed by 30% debt and 70% equity. Assume debt beta = 0, R_f = 10% and R_m = 18%. What is the required rate of return?
          A. 8.4%;
          B. 18%;
          C. 16.72%;
          D. 10%.

   (v)   The interest rate in the United States is 5%, in Japan, the comparable rate is 1.5%. The spot rate for the yen is $ 0.012067821. If the interest rate parity holds, what is the 90-day forward rate on the Japanese yen?
          A. $ 0.01248;
          B. $ 0.01359;

    C. $ 0.01350;

    D. $ 0.01195.

(vi) **The capital structure of a company is as under:**
3,00,000 Equity Shares of ₹ 10 each,
32,000, 12% Preference Shares of ₹ 100 each,
General Reserve ₹ 15,00,000,
Securities Premium Account ₹ 5,00,000,
25,000, 14% Fully Secured Debentures of ₹ 100 each,
Term Loan of ₹ 13,00,000.
Based on these, the leverage of the company is —
    A. 60.22%;
    B. 58.33%;
    C. 55.21%;
    D. 62.10%.

(vii) **The capital of PQR Limited is as follows :**
9% preference shares of ₹ 10 each ₹ 3,00,000
Equity shares of ₹ 10 each ₹ 8,00,000
Following further information is available:
Profit after Tax ₹ 2,70,000
Equity Dividend paid 20%
The market price of equity shares ₹ 40 each
Then the EPS and PE ratio are:
    A. ₹ 3.12 and 10.80;
    B. ₹ 3.33 and 10.34;
    C. ₹ 4.51 and 12.56;
    D. ₹ 3.04 and 13.16.

(viii) **Calculate the future value of ₹ 1,000 invested in State Bank Cash Certificate scheme**
for 2 years @ 5.5% p.a., compounded semi-annually.
    A. ₹ 1,114.62;
    B. ₹ 1,104.62;
    C. ₹ 1,401.51;
    D. ₹ 1,141.51.

Answer:

(i)   A.

$$K_d = \frac{₹150(1-0.35)+(₹1,000-₹925)/10}{(₹1,000+₹925)/2} = 10.9 \text{ per cent}$$

$K_d = 10.9\%$

(ii)   C.

We have $/MR and $/₹. We need to find ₹/MR.

₹/MR = ₹/$ × $/MR.

    = 1/(₹/$) × $/MR

    = 1/0.02212 × 0.2632 = 11.90.

(iii)   A.

$$EPS = \frac{Dividend}{Payout\ ratio} = \frac{₹5}{0.6} = ₹8.33$$

According to Walter model, $P = \dfrac{D+(E-D)\times\dfrac{r}{k}}{k}$

$$= \frac{5+(8.33-5)\times \dfrac{0.20}{0.14}}{0.14}$$

$$= ₹ 69.69$$

(iv) C.

Beta of portfolio $= \left[\beta_{equity} \times E/(D+E) \right] + \left[\beta_{debt} \times D/(D+E) \right]$

$= (1.2 \times 0.70) + (0 \times 0.30) = 0.84$

Therefore, required rate of return $= R_f + \beta_p (R_m - R_f)$

$= 10\% + 0.84 \,(18\% - 10\%)$

$= 16.72\%$

(v) A.

As per Interest Rate Parity Theory, the 90 day forward rate on the yen should be equal to —

$ 0.012067821 [(1+0.05/4) ÷ (1+0.015/4)]

$ 0.012067821 [(1.05/4) ÷ (1.015/4)]

= $ 0.012067821 × 1.034482759 = $ 0.0124839

or $ 0.01248

(vi) B.

Fixed Income Funds = ₹ (32,00,000 + 25,00,000 + 13,00,000)

Equity Funds = ₹ (30,00,000 + 15,00,000 + 5,00,000)

$$\text{Leverage} = \frac{\text{Fixed Income Funds}}{\text{Fixed Income Funds} + \text{Equity Funds}}$$

$$= \frac{₹\,70,00,000}{₹\,1,20,00,000} = 58.33\%$$

(vii) D.

$$EPS = \frac{PAT - \text{Preference dividend}}{\text{No. of Equity Shares}}$$

$$= \frac{₹\,(2,70,000 - 27,000)}{80,000} = ₹\,3.04$$

$$PE\ Ratio = \frac{\text{Market Price}}{EPS} = \frac{₹\,40}{₹\,3.04} = 13.16$$

(viii) A.

$$FV_n = PV\left(1 + \frac{c}{m}\right)^{m\times n}$$

$$= 1,000\left(1 + \frac{0.055}{2}\right)^{2\times 2}$$

$$= 1,000\,(1.0275)^4 = ₹\,1,114.62$$

(b) State if each of the following sentences is true or false: **[1 × 9]**

    (i)   **Low financial leverage indicates high financial risk and vice –versa.**

    (ii)   **An investor expecting a fall in interest rates buys a floor and also a cap.**

    (iii)   **Treasury management includes risk management.**

    (iv)   **Profitability Index is the profit expected in capital budgeting.**

    (v)   **In the CAPM model, 'systematic risk' is the risk that cannot be eliminated by diversification, it being common to all firms.**

    (vi)   **There is no relevance of firm's production policy in determining the working capital requirement of a firm.**

(vii)   **Stochastic model is one of the various ways in determining the optimum level of cash balances of a company.**

(viii)   **Cost plus pricing is normally followed in those public enterprises which have no domestic competition and whose production costs are higher than the price of similar imported products.**

(ix)   **Risk Adjusted Discount Rate is a conventional technique to analyse risk.**

Answer:

(i)   False: Low financial leverage indicates less risky situation, low operating leverage combined with low financial leverage will constitute an ideal situation.

(ii)   True: A Cap provides variable rate borrowers with protection against rising interest rates while also retaining the advantages of lower or falling interest rate. Floors are used to obtain certainty for investments and budgeting by setting minimum interest rate on investments.

(iii)   True: the scope of treasury management function is quite vast and it includes Foreign Exchange Risk Management, Financial Risk Management etc.

(iv)   False: Profitability Index is the present value of an anticipated future cash inflows divided by the initial outlay.

(v)   True: Systematic risk arises out of external and uncontrollable factors. This risk cannot be avoided.

(vi)   False: The firm's production policy (manufacturing cycle) is an important factor to decide the working capital requirement of a firm. The working capital requirement will be higher with varying production schedules in accordance with the changing demand.

(vii)   True: The optimum level of cash balances of a company can be determined in various ways, such as — Inventory model (Economic Order Quantity) to cash management, Stochastic model, Probability model.

(viii) False: Import-based pricing is normally followed in those public enterprises which have no domestic competition and whose production costs are higher than the price of similar imported products.

(ix)   True: Risk Adjusted Discount Rate or RADR is a conventional technique to analyse risk. It is based on the premise that riskiness of a proposal may be taken care of, by adjusting the discount rate.

PART B (75 MARKS)

Question 2.
(a) An oil company imports crude oil at the rate of 100 tonnes per month. The price of crude oil in the month of January is ₹ 5,000 per barrel (1 tonne = 7.33 barrel). It is forecasted that in the month of March the price per barrel of crude oil is likely to touch ₹ 6,000. The company wants to hedge against the rising price for its requirement in March. The futures contract price for March is now traded at ₹ 5,700 per barrel for 100 barrels.
Required:
(i) Explain how the oil company can hedge its exposure against the rising price of crude oil, and state the number of contracts it should book for it.
(ii) What will be the effective price per barrel if in the month of March the price of crude oil is as under:
Spot price — ₹ 5,500 per barrel
Futures — ₹ 5,800 per barrel.   **[(3+2)+5]**

Answer:
(i)   The oil company must go long on futures of crude oil. Hedging strategy would be to take position in the futures market opposite to that of in the physical market. The hedging strategy should be:
January — buy futures contract now

March — purchase crude oil at the price prevailing then in spot market, and sell the futures contract.

Quantity to be imported/hedged = 100 tonnes or 733 barrels

Contract size = 100 barrels

No. of contract bought = 733/100

= 7.33 (rounded to 8)

(ii) Position in March :

Spot price = ₹ 5,500

Future price = ₹ 5,800

Purchase price in spot = 733 × ₹ 5,500 =	₹ 40,31,500

Cash flow on future position:

Buying price = ₹ 5,700 per barrel

Selling price = ₹ 5,800 per barrel

Profit = ₹ 100 per barrel

Realization from futures market = ₹ 8 × 100 × 100 =	₹ (–) 80,000
	₹ 39,51,500

Effective price per barrel = ₹ 39,51,500/733

= ₹ 5,391.

(b) What do you understand by 'Trading on Equity'? State the limitations of Trading on Equity?

[1+4]

Answer:

The use long-term fixed interest bearing debt and preference share capital along with equity share capital is called 'Trading on Equity' or Financial Leverage.

Trading on Equity suffers from the following limitations:
   (i)   It is a double-edged weapon.
   (ii) It is beneficial only to companies having stability in earnings, such as an electricity company;
   (iii) It increases risk and rate of interest;
   (iv) It is liable to restrictions from financial institutions.

Question 3.

(a) You are given the middle rates as under :
   ₹ 80/£ 1 in London,
   ₹ 47 /US $ in Delhi, and
   US $ 1.58/£ 1 in New York.
   Compute the Arbitrage gain on ₹ 8,00,000.   **[5]**

Answer:

The following sequential transactions will serve the purpose:
   (i)   Buy US $ in Delhi and get 17,021.277 US $ for ₹ 8,00,000;
   (ii)   Sell the above US $ in N.Y for £ and get ($ 17,021.277 ÷ $ 1.58) = £ 10,772.96
   (iii)   Sell the £ obtained in (ii) for INR in London
           £ 10,772.96 × 80 = ₹ 8,61,836.80.

Arbitrage gain will be ₹ (8,61,836.80 – 8,00,000) = ₹ 61,836.80.

(b) A firm's sales, variable costs and fixed cost amount to ₹ 75,00,000, ₹ 42,00,000 and ₹ 6,00,000 respectively. It has borrowed ₹ 45,00,000 at 9 per cent and its equity capital totals ₹ 55,00,000.

    (i) What is the firm's ROI?
    (ii) Does it have favourable financial leverage?
    (iii) If the firm belongs to an industry whose asset turnover is 3, does it have a high or low asset leverage?
    (iv) What are the operating, financial and combined leverages of the firm?
    (v) If the sales drop to ` 50,00,000, what will the new EBIT be?
    (vi) At what level will the EBT of the firm equal to zero?   **[1+1+1+3+1+1]**

Answer:

(i) ROI = EBIT / Investment
    EBIT = Sales – VC – FC = ₹ 75 lakh – ₹ 42 lakh – ₹ 6 lakh = ₹ 27 lakh
    ROI = ₹ 27 lakh / ₹ 100 lakh = 27%

(ii) Yes, the firm has favourable financial leverage as its ROI is higher than the interest on debt.

(iii) Asset turnover = Sales / Total assets or Total investments
    = ₹ 75 lakh / ₹ 100 lakh = 0.75. It is lower than the industry average.

(iv) $\text{Operating leverage} = \dfrac{\text{Sales - Variable cost}}{\text{EBIT}}$

    = (₹ 75 – ₹ 42) lakh / ₹ 27 lakh
    = 1.22

    $\text{Financial levarage} = \dfrac{\text{EBIT}}{\text{EBIT - Interest}} = \dfrac{₹\ 27\ \text{lakh}}{(₹\ 27\ \text{lakh} - ₹\,4.05\ \text{lakh})} = 1.18$

    $\text{Combined leverage} = \dfrac{\text{Sales - Variable cost}}{\text{EBIT - Interest}} = \dfrac{₹\,33\ \text{lakh}}{₹\,22,95,000} = 1.44$

    Alternatively = OL × FL = 1.22 × 1.18
    = 1.44

(v) EBIT at sales level of ₹ 50 lakh :   ₹

	₹
Sales revenue	50,00,000
Less: Variable costs (50 lakh × 0.56)	28,00,000
Less: Fixed costs	6,00,000
EBIT	16,00,000

(vi) Zero EBT implies break-even sales ratio (BESR)
    Break-even sales ratio = FC/CV ratio,
    CV ratio = ₹ 33 lakh / ₹ 75 lakh = 44%
    BESR = (₹ 6 lakh + ₹ 4.05 lakh) / 0.44 = ₹ 22,84,091.

(c) Write briefly on Foreign Direct Investment.   **[2]**

Answer:

Foreign Direct Investment (FDI) is that investment which is made to serve the business interest of the investors in a company, which is in a different country of the investor. FDI flows like the flow in the capital market, have been the fastest growing component of long term flow to developing countries as a whole. FDI is considered to be an essential tool for jump starting economic growth of a country by bolstering domestic capital, productivity and employment. FDI has an impact on country's trade balance as well. In India FDI is guided by certain regulatory norms and investments are allowed in specified percentages.

Question 4.

(a) AMRITAM Ltd. has a total sale of ₹ 3.2 crores and its average collection period is 90 days. The past experience indicates that bad debts losses are 1.5% on sales. The expenditure incurred by the firm in administering its receivable collection efforts is ₹ 5,00,000. A factor is prepared to buy the firm's receivables by charging 2% commission. The factor will pay advance on receivables to the firm at an Interest rate of 18% per annum after withholding 10% as reserve. Assume 360 days in a year. Calculate the effective cost of factoring to the firm. **[7]**

Answer:

Average level of receivables = ₹ 3.2 crores x 90/360	₹ 80,00,000
Factoring commission = ₹ 80 lakhs x 2 / 100	₹ 1,60,000
Factoring reserve = ₹ 80 lakhs x 10%	₹ 8,00,000
Amount available for advance = ₹ [80-(1.6 +8)] lakhs	₹ 70,40,000
Factor will deduct his interest @ 18% $$= \frac{70.4\text{lakhs} \times 18 \times 90}{100 \times 360} = 3,16,800$$ Therefore, Advance to be paid = ₹ (70,40,000–3,16,800)	₹ 67,23,200
Annual cost of factoring to the firm: Factoring commission $= 1,60,000 \times \dfrac{360}{90}$	₹ 6,40,000
Interest charges $= ₹ 3,16,800 \times \dfrac{360}{90}$	₹ 12,67,200
Total	**₹ 19,07,200**
Firm's saving on taking factoring service: Cost of credit administration saved	₹ 5,00,000
Cost of Bad debts $= ₹ 3.20\text{Cr.} \times \dfrac{1.5}{100}$ avoided	₹ 4,80,000
Total	**₹ 9,80,000**

Net cost to the firm = ₹ (19,07,200 – 9,80,000)= ₹ 9,27,200

Effective rate of interest to the firm $= \dfrac{\text{Net cost}}{\text{Advance to pay}} = \dfrac{9,27,200}{67,23,200} \times 100 = 13.79\%$

(b) VEDAVYAS Ltd. is considering two mutually exclusive projects M and project N. The Finance Director thinks that the project with higher NPV should be chosen, whereas the Managing Director thinks that the one with the higher IRR should be undertaken, especially as both projects have the same initial outlay and length of life. The company anticipates a cost of capital of 10% and the net after-tax cash flow of the projects are as follows:

Year	0	1	2	3	4	5
Cash flows (₹)						
Project M	(4,00,000)	70,000	1,60,000	1,80,000	1,50,000	40,000
Project N	(4,00,000)	4,36,000	20, 000	20, 000	8,000	6,000

You are required to:
(i) Calculate the NPV and IRR of each project.
(ii) State with reasons, which project you would recommended.   **[(3+3)+2]**

Answer:
(i) Calculation of NPV and IRR

NPV of Project M:

Year	Cash Flows (₹)	Discount factor (10%)	Discounted Values (₹)	Discount factor (20%)	Discounted Values (₹)
0	(4,00,000)	1.000	(4,00,000)	1.000	(4,00,000)
1	70,000	0.909	63,630	0.833	58,310
2	1,60,000	0.826	1,32,160	0.694	1,11,040
3	1,80,000	0.751	1,35,180	0.579	1,04,220
4	1,50,000	0.683	1,02,450	0.482	72,300
5	40,000	0.621	24,840	0.402	16,080
NPV			58,260		(38,050)

IRR of Project M:
At 20%, NPV is (-) ₹ 38,050 and at 10% NPV is ₹ 58,260

$$\therefore IRR = 10 + \frac{58,260}{58,260 + 38,050} \times 10 = 10 + 6.05 = 16.05\%$$

NPV of Project N:

Year	Cash Flows (₹)	Discount factor (10%)	Discounted Values(₹)	Discount factor (20%)	Discounted Values (₹)
0	(4,00,000)	1.000	(4,00,000)	1.000	(4,00,000)
1	4,36,000	0.909	3,96,324	0.833	3,63,188
2	20,000	0.826	16,520	0.694	13,880
3	20,000	0.751	15,020	0.579	11,580
4	8,000	0.683	5,464	0.482	3,856
5	6,000	0.621	3,726	0.402	2,412
NPV			37,054		(5,084)

IRR of Project M:
At 20%, NPV = (-) ₹ 5,084 and at 10% NPV = ₹ 37,054

$$\therefore IRR = 10 + \frac{37,054}{37,054 + 5,084} \times 10 = 10 + 8.79\% = 18.79\%$$

(ii) Both the projects are acceptable because they generate the positive NVP at the company's cost of capital at 10%. However, the company will have to select project M because it has higher NPV. If the company follows IRR method, then Project N should be selected because of higher internal rate of return (IRR). But when NPV and IRR give contradictory results, a project with higher NPV is generally preferred because of higher return in absolute terms. Hence, Project M should be selected.

Question 5.

(a) A company is faced with the problem of choosing between two mutually exclusive projects. Project A requires a cash outlay of ₹ 1,00,000 and cash running expenses of ₹ 35,000 per year. On the other hand, Project B will cost ₹ 1,50,000 and require cash running expenses of ₹ 20,000 per year. Both the machines have an eight-year life. Project A has a salvage value of ₹ 4,000 and Project B has a salvage value of ₹ 14,000. The company's tax rate is 50% and it has a 10% required rate of return.

Assuming depreciation on straight line basis and that there is no funds constraint for the company, ascertain which project should be accepted. Present value of an annuity of ₹ 1 for 8 years = 5.335 and present value of ₹ 1 at the end of 8 years = 0.467, both at the discount rate of 10%.

Please solve the problem by an incremental cash flow approach. [10]

Answer:

A Company
Financial Evaluation of Project A & Project B

	Project A (₹)	Project B (₹)	Incremental Cash flows (₹)
Cash outflows	1,00,000	1,50,000	50,000
Cash running expenses	35,000	20,000	15,000
Depreciation	12,000	17,000	(5,000)
Total saving			10,000
Less : Tax @ 50%			(5,000)
Saving after tax			5,000
Add : Depreciation (not being cash outflow)			5,000
Net Saving			10,000
Salvage value at the end of year 8	4,000	14,000	10,000
Present value of annual saving for 8 years = PV of annuity × Net savings for 8 years = 10,000 × 5.335			53,350
Present value of incremental salvage value at end of year 8 = 0.467 × 10,000			4,670
Total			58,020
Less : Cash outflow (incremental)			(50,000)
Net Present value (incremental)			8,020

Recommendation:
Since Project B has positive NPV over and above the NPV of Project A at 10% Discount rate, Project B is recommended for acceptance.

Note: Working for depreciation:
Project A (₹ 1,00,000 – ₹ 4,000) / 8 years = ₹ 12,000
Project B (₹ 1,50,000 – ₹ 14,000) / 8 years = ₹ 17,000.

(b) Write down the steps in Project Management. [5]

Answer:
Project management consists of the following steps:

- Combining activities into "Work packages", which have the features of a project i.e., the work packages are related to one another, and they all contributes to the same goal(s), and bound by time, cost and performance targets.
- Entrusting whole project to a single responsibility centre called the "Project Manager" for coordinating, directing and controlling the project.
- Choosing a suitable organisation structure to support and service the project internally, and through vendors and contractors externally.
- Building up commitment through negotiations, coordinating and directing towards goals through schedules, budgets and contracts.
- On the basis of schedules, budgets and contracts, ensuring that goals are achieved through continuous monitoring and control.

Question 6.

(a) An extract from exchange rate list of a Kolkata based bank is given below:
    ₹/¥ = 0.3992 : 0.4002
    (i) How many Yen will it cost for a Japanese tourist visiting India to purchase ₹ 2,500 worth of jackfruit?
    (ii) How much will Mr. Basu in Kolkata have to spend in rupees, to purchase a Sony Camcorder worth Yen 1,25,000? [2+2]

Answer:
(i)   The Japanese will have to pay —
     (₹ 2500/0.3992 or) ¥ 6263 for the jackfruit.

(i)   Mr. Basu will have to pay —
     (¥ 125000 × 0.4002) or ₹ 50,025 for the Camcorder.

(b) An Indian importer has to settle a bill for US $ 1,50,000. There are two options available:
    Option A - Pay immediately by drawing from the bank overdraft account bearing interest @ 15% p.a.
    Option B - Pay after 3 months with interest @ 5% p.a. in foreign currency.
    The exchange rates are as under:
    Spot (₹/US $) = ₹ 50.50/ ₹ 51.00
    3 months forward (₹/US $) = ₹ 51.50/ ₹ 52.00
    Evaluate the two options and advise. [4+1]

Answer:
Option A — Pay immediately

		₹
(i) Bill value converted to Ind rupees	US $ 1,50,000 × ₹ 51	76,50,000
(ii) Interest for 3 months on Bank overdraft (3/12)		2,86,875
		79,36,875

Option B — Pay after 3 months with Interest to foreign Bank
(i) Bill value	US $ 1,50,000	
(ii) Interest @ 5% for 3 months 3/12	US $ 1,875	
US $ 1,51,875 converted to Ind ₹ at forward rate of ₹ 52		78,97,500

Option B is better as outflow in Rupees is less.

(c) Z Co. has a capital structure of 30% debt and 70% equity. The company is considering various investment proposals costing less than ₹ 30 Lakhs. The company does not want to disturb its present capital structure. The cost of raising the debt and equity are as follows:

Project Cost	Cost of Debt	Cost of Equity
Upto ₹ 5 Lakhs	9%	13%
Above ₹ 5 Lakhs and upto ₹ 20 Lakhs	10%	14%
Above ₹ 20 Lakhs and upto ₹ 40 Lakhs	11%	15%
Above ₹ 40 Lakhs and upto ₹ 1 Crore	12%	15.55%

Assuming the tax rate is 50%, compute the cost of two projects A and B, whose fund requirements are ₹ 8 Lakhs and ₹ 22 Lakhs respectively. If the projects are expected to yield after tax return of 11%, determine under what conditions it would be acceptable.

[6]

Answer:

Particulars	K_d (Debt)%	K_e (Equity) %	WACC = K0
% of Debt and Equity	30%	70%	
Upto ₹ 5 Lakhs	9×50% = 4.5%	13%	4.5×30%+13×70% = 10.45%
Above ₹ 5 Lakhs upto ₹ 20 Lakhs	10×50% = 5.0%	14%	5.0×30%+14×70% = 11.30%
Above ₹ 20 Lakhs upto ₹ 40 Lakhs	11×50% = 5.5%	15%	5.5×30%+15×70% = 12.15%
Above ₹ 40 Lakhs upto ₹ 1 Crore	12×50% = 6.0%	15.55%	6.0×30%+15.55×70% = 12.69%

Project	Investment	WACC	Return	Decision
A	₹ 8.00 Lakhs	11.3% (5L to 20L)	11%	ROI < WACC
B	₹ 22.00 Lakhs	12.15% (20L to 40L)	11%	ROI < WACC

Decision: If ROI 11%, Project is acceptable only if —
(i) Project Investment is less than or upto ₹ 5 Lakhs.
(ii) Fractional Investment is possible on a divisible project — Investment is less than or upto ₹ 5 Lakhs.

Question 7.

(a) From the following information of A Ltd., calculate (i) Gross Operating Cycle, (ii) Net Operating Cycle, and (iii) No. of operating cycles in a year.

Particulars	₹
Raw material inventory consumed during the year	60,00,000
Average stock of raw material	10,00,000
Factory cost of goods produced	1,05,00,000
Average stock of work-in-progress	4,37,500
Cost of goods produced	1,14,00,000
Average stock of finished goods	9,50,000
Average trade debtors	11,25,000
Cost of credit sales	90,00,000
Average trade creditors	5,00,000
Expenses for the year	30,00,000
Average creditors for expenses	5,00,000
No. of working days in a year (Assume 360 days)	

[9]

Answer:

$$\text{Raw material storage period} = \frac{\text{Average stock of raw material}}{\text{Average cost of raw material consumption per day}}$$

$$= \frac{₹10,00,000}{₹60,00,000 \, / \, 360} = 60 \text{ days}$$

$$\text{Work-in-progress holding period} = \frac{\text{Average stock of work - in-progress}}{\text{Average cost in W.I.P. per day}}$$

$$= \frac{₹4,37,500}{₹1,05,00,000 \, / \, 360} = 15 \text{ days}$$

$$\text{Finished goods storage period} = \frac{\text{Average stock of finishedgoods}}{\text{Average cost of goods produced per day}}$$

$$= \frac{₹9,50,000}{₹1,14,00,000 \, / \, 360} = 30 \text{ days}$$

$$\text{Debtors collection period} = \frac{\text{Average trade debtors}}{\text{Average of cost of credit sales per day}}$$

$$= \frac{₹11,25,000}{₹90,00,000 \, / \, 360} = 45 \text{ days}$$

$$\text{Creditors' payment period} = \frac{\text{Average trade creditors}}{\text{Average credit purchases per day}}$$

$$= \frac{₹5,00,000}{₹60,00,000 \, / \, 360} = 30 \text{ days}$$

$$\text{Average time lag in payment of expenses} = \frac{\text{Average creditors for expenses}}{\text{Average expenses per day}}$$

$$= \frac{₹5,00,000}{₹30,00,000 \, / \, 360} = 60 \text{ days}$$

Gross operating cycle = 60 + 15 + 30 + 45 = 150 days

Net operating cycle = 60 + 15 + 30 + 45 – 30 – 60 = 60 days

$$\text{No. of operating cycle in a year} = \frac{\text{No. of days in a year}}{\text{Net operating cycle}} = \frac{360 \text{ days}}{60 \text{ days}}$$

= 6 operating cycles in a year.

(b) The paid-up capital of a company is ₹ 100 lakh. It has been declaring 20% dividend for the last 5 years. It has under consideration an expansion programme involving an investment of ₹ 100 lakh and its board of directors desires to raise the dividend to 25%. The expansion programme can be financed by four alternatives – A) 100% equity; B) 18% institutional loan (debt) and equity 50:50; C) Equity and debt, 70:30; and D) 100% debt. Income tax and dividend tax rate are 35% and 10% respectively.

Assuming rate of return as X, analyse the various financing alternatives from the point of view of taxes. **[6]**

Answer:

Effect of Taxes on Financing Alternatives

(₹ in lakhs)

Particulars	A	B	C	D
Return on ₹ 100 lakh	100X	100X	100X	100X
Less : Interest (0.18)	—	9	5.4	18
Balance	100X	100X-9	100X-5.4	100X-18
Less : Tax (0.35)	35X	35X-3.15	35X-1.9	35X-6.30
Balance	65X	65X-5.85	65X-3.50	65X-11.70
Add : Distributable profit before expansion (0.20 × ₹ 100 lakh)	20	20	20	20
Total profits available for distribution (i)	20 + 65X	14.15 + 65X	16.50 + 65X	8.30 + 65X
Expected rate of dividend (%)	25	25	25	25
Expected dividend [0.25 × (₹ 100 lakh + new capital)]	50	37.50	42.50	25
Dividend tax (0.10)	5	3.75	4.25	2.50
Total of dividend and dividend tax (ii)	55	41.25	46.75	27.50
Rate of return (value of X) to pay dividend and dividend tax [value of X if (i) = (ii)]%	54	42	47	30

Note: 20 + 65X = 55 or, X = 35/65 = 53%; other values are also determined like this.

Question 8.
Write Short Notes on any three of the following. **[5×3]**
  (a) Asset Securitisation
  (b) Project Life Cycle
  (c) Zero working capital
  (d) Foreign Collaboration

Answer:

(a) Asset securitisation is the process by which non-tradable assets are converted into tradable securities. Assets like mortgages, loans receivables, cash credit receivables etc. on the balance sheet of user-originator (say, Housing Finance Co.) are packaged, underwritten and sold in the form of securities to investors through carefully structured process. These securities may be in the form of commercial paper, certificate of deposits, notes, etc.

Process:
  (i)   The originator owing the assets, indentifies a pool of homogenous assets, which are held for securitisation.
  (ii) The pool of assets is then transferred to a different entity, known as Special Purpose Vehicles (SPV).
  (iii) The SPV issues the securities backed by the pool of assets. They also indicate the liability for the cash consideration received from the investors.
  (iv) The consideration is remitted by the SPV to the originator, which then replaces the securitised assets from its balance sheet with the consideration received.

(b) Project Life Cycle:

The method of dividing the phases in a project. It provides a framework for budgeting manpower and resources allocation and for scheduling project milestones and project reviews. The various phases are:

(i) Concept or initialization phase — project idea emerges and the management decide on the need for a project.
(ii) Project definition phase — this phase includes techno-economic viability, technical configuration, performance requirement, cost estimates with limits and schedule of implementation.
(iii) Growth or organization phase — it includes establishing infrastructure, project engineering design, setting up project organization, preparation of schedules and budgets-raising finance-obtain licenses-tenders etc.
(iv) Implementation phase — preparation of specifications, placing orders, invite bids, evaluating bid, issuing construction drawings, installation, piping, testing, commissioning of the plant.
(v) Project shutdown and clean-up — P & M built and erected with the active involvement handed over for production to a different agency.

(c) Zero working capital:
Working capital is the comparison of current assets to current liabilities. For most organizations, current assets exceed current liabilities and working capital therefore represents the liquid reserves for meeting current obligations. Creditors prefer high levels of working capital since they are concerned about receiving payment. However, management prefers low levels of working capital since working capital earns an extremely low rate of return. Some companies are now driving working capital to record low levels, so-called Zero Working Capital. By keeping working capital at zero, funds are released for many other opportunities.

Zero Working Capital requires major changes in how an organization functions. One way to implement Zero Working Capital is to have a demand-based organization. Demand-based organizations do everything only as they are demanded: Fill customer orders, receive supplies, manufacture products, and other functions are done only as needed. The production facilities run 24 hours a day non-stop according to the demands within the marketplace. There are no inventories; everything is supplied immediately as needed. The end result of this demand driven organization is that little, if any, working capital is necessary to run the business.

Companies like GE (General Electric) and Campbell Soup have made Zero Working Capital a major strategic objective for the organization. As more and more businesses find faster ways of servicing customers, the concept of Zero Working Capital will become more main stream.

(d) In a project environment, foreign collaborations are normally entered into by industries where a sophisticated technology (not available indigenously) is required or where upgradation of existing technology is necessary, or where import of technology and capital is involved (e.g. petro-chemicals). Foreign collaborations could be purely technical collaboration where only transfer of technology is involved, or technical-cum-financial collaboration involving both transfer of technology and capital. All proposals for setting up foreign collaboration require prior approval of the Government. Govt's approval is guided by 'need and appropriateness of technology' to the growth of the industry.

Foreign collaboration projects have separate tax implications. Various aspects of Foreign collaboration project could be broadly classified into three sections, viz. —
(1) Outline of Govt. Policy Framework (reg. need of foreign technology/royalty payments/collaboration agreement/Foreign investment);

(2)   Procedural aspects of setting up a project; and

(3)   Tax aspects of foreign collaboration.