

Question Paper

Financial Management – II (142) : July 2003

Section A : Basic Concepts (40 Points)

- This section consists of questions with serial number 1 - 40.
- Answer all questions.
- Each question carries one point.

1. Which of the following will cause a decrease in the net operating cycle of a firm?
 - a. Increase in the average collection period
 - b. Increase in the average payment period
 - c. Increase in the finished goods storage period
 - d. Increase in the raw materials storage period
 - e. Increase in the work-in-progress period.
2. Which of the following is a spontaneous source of financing current assets?
 - a. Equity capital
 - b. Debenture capital
 - c. Accrued wages
 - d. Term loan
 - e. Preference capital.
3. Which of the following is **not** an assumption underlying the Modigliani and Miller approach to capital structure?
 - a. Information is freely available to investors
 - b. The transaction cost is constant irrespective of the value of the transactions in securities
 - c. Firms can be divided into classes in such a way that all the firms falling within one class have the same degree of business risk
 - d. There is no corporate or personal income tax
 - e. Investors make rational investment decisions.
4. Which of the following is **not** an assumption underlying the concept of economic order quantity?
 - a. Demand for the item is uniformly distributed over the planning period
 - b. The delivery of the item ordered is instantaneous
 - c. The ordering cost remains the same irrespective of the order size
 - d. There is no carrying cost
 - e. The purchase price per unit of the item remains constant.
5. The cost of which of the following sources of finance can be found out by the bond yield plus risk premium approach?
 - a. Bonds
 - b. Term loan
 - c. Trade credit
 - d. Preference capital
 - e. Equity capital.
6. Which of the following is meant by the cost of capital of a firm?
 - a. It is the dividend paid to the preference shareholders
 - b. It is the dividend paid to the equity shareholders
 - c. It is the total dividend paid to both equity and preference shareholders
 - d. It is the interest paid on total debt of the firm
 - e. It is weighted average of the costs of various sources of long-term finance used by the firm.

7. Overtrading means
 - a. The firm has disproportionately high amount of working capital with respect to the level of sales
 - b. The firm has disproportionately low amount of working capital with respect to the level of sales
 - c. The firm has disproportionately high level of receivables with respect to total assets
 - d. The firm has disproportionately high level of cash with respect to total assets
 - e. The firm has been experiencing low turnover of working capital.
8. Which of the following is **not** a logical consequence of liberalizing credit standards?
 - a. Increase in bad debt losses
 - b. Increase in number of customers
 - c. Decrease in collection costs
 - d. Increase in amount of receivables
 - e. Increase in sales.
9. Which of the following is **false** with regard to the aggressive working capital policy?
 - a. The level of investment in current assets is low
 - b. There is a greater weightage of short-term sources for financing current assets
 - c. The cost of financing current assets tends to be high
 - d. The firm tends to face a higher risk of technical insolvency
 - e. None of the above.
10. The term agency costs in the context of capital structure means
 - a. The commission payable by a company to its purchasing agents
 - b. The commission payable by a company to its selling agents
 - c. The expenses incurred in distribution of the products of the company
 - d. The restrictive covenants imposed on a company by its lenders
 - e. The dividends paid by a company to its shareholders.
11. Holding cash balance to meet contingencies is
 - a. A manifestation of the transaction motive
 - b. A manifestation of the speculative motive
 - c. A manifestation of the precautionary motive
 - d. A characteristic of large firms only
 - e. A characteristic of small firms only.
12. Which of the following is **not** a benefit of holding inventories?
 - a. Elimination of ordering costs
 - b. Avoiding production shortages
 - c. Availing quantity discounts
 - d. Avoiding lost sales
 - e. Reduction in ordering costs.
13. The economic appraisal of projects assesses the costs and benefits arising out of the project, from the point of view of the
 - a. Shareholders
 - b. Short-term lenders
 - c. Long-term lenders
 - d. Society as a whole
 - e. Suppliers.
14. Which of the following conditions indicate that short-term sources of funds have been used for financing long-term uses?
 - a. Current ratio is less than 1.00
 - b. Quick ratio is less than 1.00
 - c. Total debt to equity ratio is more than 1.00
 - d. Net working capital is positive
 - e. None of the above.

15. According to which approach to dividend policy, the stock price increases as dividends increase and the stock price decreases as dividends decrease?
- Walter's model
 - Gordon's model
 - Traditional approach
 - Rational expectations model
 - Miller and Modigliani approach.
16. Which of the following is **false** with regard to the internal rate of return (IRR)?
- It considers the cash flows over the entire project life
 - It considers the time value of money
 - It is the rate of return at which the present value of benefits is equal to the present value of costs
 - It is uniquely defined in case of projects which entail cash inflows and outflows that are interspersed with each other
 - None of the above.
17. According to which capital structure theory, does the overall capitalization rate and the cost of debt remain constant for all degrees of leverage?
- Net operating income approach
 - Net income approach
 - Traditional approach
 - Both (a) and (b) above
 - Both (b) and (c) above.
18. Which of the following should **not** be considered for assessing the costs and benefits arising out of projects?
- Incremental costs
 - Opportunity costs
 - Allocated overheads
 - Sunk costs
 - Both (c) and (d) above.
19. If the net present value of an investment (using cost of capital as the discount rate) is positive, then which of the following is **true**?
- Internal Rate of Return = Cost of capital
 - Internal Rate of Return > Cost of capital
 - Internal Rate of Return < Cost of capital
 - Benefit-Cost Ratio < 1
 - None of the above.
20. Which of the following results in a collection float?
- Cheques issued by a firm, but awaiting payment by the bank
 - Cheques deposited by a firm in the bank, but not cleared by the bank
 - Payments due from sundry debtors
 - Payments due to sundry creditors
 - None of the above.
21. Which of the following sources of long-term finance arises out of the operations of a profit making business?
- Preference capital
 - Equity capital
 - Debenture capital
 - Term loan
 - Reserves and surplus.

22. A supplier offers the terms of credit '2/10, net 45' to a firm. Which of the following is **correct**?
- The purchaser will be allowed 10 percent discount, if it pays within 2 days of purchase
 - The purchaser will be allowed 2 percent discount, if it pays within 45 days of purchase
 - The purchaser will be allowed 2 percent discount, if it pays within 10 days of purchase
 - The purchaser will be allowed 10 percent discount, if it pays within 45 days of purchase
 - None of the above.
23. Which of the following is **not** a source of long-term finance?
- Retained earnings
 - Equity capital
 - Debenture capital
 - Trade credit
 - Term loan.
24. Which of the following is **true** with regard to cumulative preference shares?
- The rate of dividend is variable
 - The issuer can purchase the preference shares at a time before maturity
 - All unpaid dividends are carried forward and are payable
 - The preference shares are convertible into equity shares
 - None of the above.
25. The letter of credit is
- A letter sent by the bank to its client which confirms that a loan has been sanctioned
 - An arrangement in which a bank undertakes to pay a supplier of the client of the bank, if its client fails to pay for the goods purchased from the supplier
 - An arrangement between a firm and its bank which facilitates timely collection of receivables of the firm
 - A letter sent by a firm to its customer which states that the credit period has been extended
 - A letter sent by a supplier to a firm which states that the supplier has agreed to supply goods on credit to the firm.
26. Which of the following types of current assets is most likely to be absent in a firm which undertakes trading business only?
- Inventory of finished goods
 - Cash
 - Receivables
 - Work-in-process
 - Prepaid expenses.
27. Other things remaining the same, if the average stock of raw materials is increased to two times its original level, then the raw materials storage period
- Reduces to half of the original period
 - Increases to two times the original period
 - Reduces unpredictably
 - Increases to four times the original period
 - Reduces to one-fourth of the original period.
28. The cost of retained earnings is considered to be equal to the
- Cost of long term loans
 - Cost of short term loans
 - Zero
 - Rate of return required by the equity shareholders
 - Rate of return on risk free investments.

29. When the realized yield approach is applied for finding out the cost of equity capital, one of the implicit assumptions is that
- Retained earnings have no cost
 - The equity shareholders require a premium over the return required by bondholders
 - The equity shareholders require a premium over the return required by preference shareholders
 - The equity shareholders require a premium over the risk-free rate of return
 - The equity shareholders will continue to expect the same returns from the share as in the past.
30. In the presence of floatation costs, the cost of external equity is
- More than the cost of existing equity capital
 - Less than the cost of existing equity capital
 - Equal to the cost of existing equity capital
 - Equal to the cost of long-term debt
 - Equal to the cost of short-term debt.
31. Which of the following is **false**?
- If the probability of bankruptcy is very high then, assets are likely to be sold at a significant discount to their true economic values
 - Bankruptcy entails high legal and administrative costs
 - Other things remaining the same the probability of bankruptcy is lower for a levered firm than for an unlevered firm
 - The equity shareholders expect a higher rate of return from a firm which is faced with the prospect of bankruptcy
 - None of the above.
32. According to Walter's model on dividend policy, if the return on investment is greater than the cost of capital, then the optimal dividend payout ratio is
- 100%
 - 0%
 - 50%
 - 25%
 - 10%.
33. According to the rational expectations model on dividend policy, if dividend is declared at the expected rate, then the market price of the share will
- Increase
 - Decrease
 - Remain unchanged
 - Change unpredictably
 - Increase by 100% of the value before dividend declaration.
34. If the annual cash inflows from a project are discounted with a zero discount rate, then the present value of the cash inflows will be
- Equal to the simple sum of all the cash inflows
 - Less than the simple sum of all the cash inflows
 - More than the simple sum of all the cash inflows
 - Equal to two times the simple sum of all the cash inflows
 - Equal to half of the simple sum of all the cash inflows.
35. Which of the following is **false** with regard to the accounting rate of return as an appraisal criterion for projects?
- It considers the profits over the entire life of the project
 - It gives more weight to the earlier receipts than the later receipts
 - It considers accounting profits instead of cashflows
 - It serves as a measure of profitability of the investment
 - None of the above.

36. Which of the following is **false** with regard to the net present value (NPV) as an appraisal criterion for projects?
- a. It gives more weight to the earlier cashflows than the later cashflows
 - b. NPVs of multiple projects can be added to give a combined NPV
 - c. It considers the cashflows over the entire life of the project
 - d. It represents the contribution of the project to the wealth of the lenders of the firm
 - e. None of the above.
37. Which of the following is the most suitable criterion for appraisal of mutually exclusive projects which provide similar service but entail different patterns of cash outflows and have different life spans?
- a. Internal rate of return
 - b. Accounting rate of return
 - c. Net present value
 - d. Payback period
 - e. Annual capital charge.
38. Which of the following is **false** with regard to infrastructure based projects?
- a. They are highly capital intensive
 - b. They have a short gestation period
 - c. They carry a high level of risk
 - d. They require financing over a long period of time
 - e. None of the above.
39. Which of the following is **false** with regard to the role of infrastructure in an economy?
- a. Poor infrastructure in an economy puts the existing enterprises in the economy at a disadvantage vis-à-vis their foreign competitors
 - b. Poor infrastructure leads to time and cost overruns in projects
 - c. Good infrastructure always ensures that all the projects are profitable
 - d. Good infrastructure of an economy helps in attracting foreign direct investment into the economy
 - e. None of the above.
40. Which of the following is **true**?
- a. When a high degree of uncertainty is associated with the future cashflows of a firm, the firm should invest all the cash in equity shares
 - b. When a high degree of uncertainty is associated with the future cashflows of a firm, the firm should maintain adequate cash balance and have an overdraft arrangement with a bank
 - c. When a firm has ready access to non-bank funds it should have a lower proportion of funds invested in marketable securities and intercorporate deposits, than free cash
 - d. When the management of a firm is averse towards risk, the firm should maintain a higher proportion of funds invested in equity shares and intercorporate deposits, than free cash
 - e. None of the above.

END OF PART A

Section B : Problems (60 Points)

- This section consists of questions with serial number 41 - 72.
- Answer all questions.
- Points are indicated against each question.

41. The value of a share after the rights issue was found to be Rs.60. The theoretical value of the right is Rs.4. The number of existing shares required for a rights share is 2. The subscription price at which rights were issued is

- a. Rs.18
- b. Rs.52
- c. Rs.66
- d. Rs.81
- e. Rs.84.

(1 point)

42. Consider the following data for XLNC Ltd.

Earnings Per Share (EPS)	Rs.7.50
Dividend Payout Ratio	40%
Equity Capitalization Rate	14%
Rate of Return on Investments	15%

If the number of shares outstanding for the firm is 2,50,000 the market value of equity is

- a. Rs.1, 28,57,500
- b. Rs.1, 38,57,500
- c. Rs.1, 39,67,500
- d. Rs.1, 48,57,500
- e. Rs.1, 49,57,500.

(1 point)

43. M/s Food Crafts is purchasing its requirements from M/s Spicy n Spicy. The credit terms offered by the suppliers are 2/10, net 45. However, Food Crafts usually pays the bills on 30th day. The cost of credit for M/s Food Crafts is

(Assume 1 Year = 360 Days)

- a. 7.27%
- b. 10.39%
- c. 14.69%
- d. 18.18%
- e. 20.99%.

(1 point)

44. Morton International's balance sheet shows debt of Rs.222.60 million. The firm has 49 million outstanding shares, and the market price of each share is Rs.85 (Face Value Rs.100). It is considering to issue Rs.850 million more debt and use the cash to repurchase its equity. Management estimates that as a result of this restructuring, the market price per share will jump to Rs.100. The value lost if the firm doesn't take up the restructuring is

- a. 0
- b. Rs.387.6 million
- c. Rs.512 million
- d. Rs.585 million
- e. Rs.735 million.

(2 points)

45. The Vexser company has the following capital structure:

Equity Shares (2,00,000)	Rs.40,00,000
10% Preference Shares	Rs.10,00,000
14% Debentures	Rs.30,00,000

The current market price of the share is Rs.20. The expected dividend next year is Rs.2 per share, which will grow at 7% forever. If the company raises an additional Rs.2,00, 000 debt by issuing 15% debentures, the expected dividend increases to Rs.3 and the price of share falls to Rs.15. The growth rate remains the same. The weighted average cost of capital for the firm, assuming a tax rate of 50% is

- a. 12.37%
- b. 15.40%
- c. 16.60%
- d. 17.00%
- e. 27.00%.

(2 points)

46. A firm has 80,00,000 ordinary shares outstanding. The current market price per share is Rs.33 and the book value per share is Rs.18. The firm's EPS is Rs.3.60 and dividend per share is Rs.3.00. The growth rate, assuming that past performance will continue is

- a. 7%
- b. 8%
- c. 9%
- d. 10%
- e. 11%.

(1 point)

47. The dividend payout ratio of a firm is 40%. The firm follows traditional approach to dividend policy with a multiplier of 6. The P/E ratio of the firm is

- a. 4.4
- b. 5.2
- c. 6.7
- d. 8.1
- e. 9.5.

(1 point)

48. Consider the following data about Pearl Enterprises:

Current Assets	=	Rs.760 lakhs
Current Liabilities including bank borrowings	=	Rs.480 lakhs
Bank borrowings	=	20% of current assets

The maximum Permissible Bank Finance (MPBF) under the methods I and II of the Tandon committee are

- a. Rs.108 lakhs and Rs.242 lakhs
- b. Rs.190 lakhs and Rs.108 lakhs
- c. Rs.242 lakhs and Rs.324 lakhs
- d. Rs.324 lakhs and Rs.242 lakhs
- e. Rs.328 lakhs and Rs.432 lakhs.

(2 points)

49. The average daily cost of production is Rs.35 lakhs and average conversion period is 3 days. The closing stock of work in process is 10% higher than the opening stock of work in process. The value of closing stock of work in process is

a. 100 lakhs
b. 110 lakhs
c. 120 lakhs
d. 130 lakhs
e. 150 lakhs.

(1 point)

50. Deccan Paints Ltd had 10 lakh equity shares outstanding at the beginning of July 2002 and these shares were traded in NSE at Rs. 150 each. The rate of capitalization appropriate to the risk class to which the firm belongs is 12%. The net income for the year is Rs. 2 crores and the investment budget is Rs.4 crores. Assume that no dividend is declared and the additional fund requirement is financed by new issue of equity shares. If Modigliani-Miller hypothesis holds good, the number of equity shares to be issued by the company is

a. 1,09,048
b. 1,09,248
c. 1,19,048
d. 1,19,248
e. 1,29,348.

(2 points)

51. Consider the following data about SKF Ltd:

Annual credit purchases Rs.52, 92,500.
Opening balance of accounts payable Rs.15, 50,000.
Closing balance of accounts payable Rs.27, 00,000.
(Assume 1 Year = 365 Days)

The average payment period (in days) for SKF Ltd. is

a. 126
b. 147
c. 176
d. 186
e. 196.

(1 point)

52. Consider the following data about two companies:

	Company X	Company Y
No. of shares Outstanding	90,000	1,50,000
Market Price per share	Rs.120	Rs.100
6% Debentures	Rs.60,00,000	Nil
Profit before Tax	Rs.18,00,000	Rs.18,00,000

Mr.A holds 10% of shares in company X. Assuming that the MM hypothesis holds good, the gain to the investor by switching from company X to company Y is

a. Rs.20, 600
b. Rs.20, 060
c. Rs.21, 060
d. Rs.21, 600
e. Rs.21, 760.

(3 points)

53. Dell Ltd has Rs100 preference shares redeemable at a premium of 10% with 15 years maturity. The preference dividend rate is 12%. The cost of the preference capital assuming that shares were issued at par with floatation cost of 5% is

- a. 12.43%
- b. 13.02%
- c. 14.25%
- d. 14.33%
- e. 15.33%.

(1 point)

54. Glamour Ltd earned a profit of Rs.20 lakhs before providing for interest and tax. The company's capital structure consists of 4,00,000 equity shares of Rs.10 each and 25,000, 14% secured redeemable debentures of Rs.150 each. The cost of equity is 16%. The value of the firm under net income approach is

- a. Rs. 37,50,000
- b. Rs. 50,37,000
- c. Rs. 92,18,750
- d. Rs. 92,81,750
- e. Rs.129,68,750.

(2 points)

55. Consider the following data about Max Mart Ltd.:

Opening Stock of Finished Goods	Rs. 650 lakhs.
Closing Stock of Finished Goods	Rs. 1,050 lakhs.
Cost of Production	Rs. 12,000 lakhs.
Selling, Admn and Financial Expenses	Rs. 4,500 lakhs.
Customs and Excise duties	Rs. 35,000 lakhs.

The finished goods storage period (in days) for Max Mart is

- a. 2
- b. 3
- c. 4
- d. 6
- e. 8.

(1 point)

56. Consider the following data for Beta Ltd:

Year		1	2	3	4	5
Earnings Per Share	(Rs.)	4.80	4.00	3.00	5.00	4.50
Dividend Per Share	(Rs.)	3.00	3.00	2.00	3.00	3.00
Payout	(%)	63	75	67	60	67
Price per share at the end	(Rs.)	42.00	45.00	33.00	38.00	36.00

If the price at the beginning of year 1 is Rs.40, the realized yield over the five year period is

- a. 4.75%
- b. 5.03%
- c. 5.25%
- d. 6.25%
- e. 7.00%.

(2 points)

57. Consider the following data of M/s. Startrack Ltd. for the year 2002-2003

Market Value of Debt	Rs.5, 00,000.
Interest	Rs.30, 000.
Net Operating income	Rs.1, 00,000.
Cost of Equity	14%.

If debt-equity ratio increases to 5:4, the revised equity capitalization rate according to net operating income approach is

- 10%
- 12%
- 14%
- 15%
- 20%.

(2 points)

58. The following details are available regarding the long term sources of finance of M/s.Shubhangi Enterprises:

Sources of Finance	Range of new financing from the source (Rs. in million)	Cost %
Equity	0-10	15.00
	10-30	16.50
	30 and above	18.00
Preference	0-1	14.50
	1 and above	15
Debt	0-15	7.50
	15-40	8.00
	40 and above	8.40

The company is considering to expand its operations and requires Rs.50 million for the same. It is planning to raise funds from these sources in the following proportions:

Equity	45%
Preference	5%
Debt	50%

The weighted marginal cost of capital of new financing in the range of Rs.40 million- Rs.50 million is

- 10.25%
- 11.23%
- 11.45%
- 12.05%
- 12.17%.

(3 points)

59. Consider the following data about Flashlight Ltd:

Gross Operating Cycle	124 days.
Net Operating Cycle	105 days.
Average collection period	40 days.
Conversion period	3 days.
Finished goods storage period	25 days.
Average payment period	19 days.

The raw material storage period (in days) is

- 27
- 37
- 48
- 56
- 65.

(1 point)

60. Varini Chemicals Ltd is planning to set up a plant for the production of organic chemicals. Profit margin it is willing to maintain is 15%. The set up cost for each production run is Rs.6,000. Cost of carrying inventory is 9%p.a. on cost of sales of average inventory. The plant has capacity of 2 million kg of chemical. If the sales price of the chemical is Rs.800 per kg then the optimum production quantity for this plant would be
- 730 kg
 - 24 hundred kg
 - 198 hundred kg
 - 222 hundred kg
 - 276 hundred kg

(2 points)

61. Suraj Tubes is contemplating of relaxing its collection effort with a view to increase its sales. At present annual sales of the company are Rs.200 lakhs, average collection period is 45 days, bad debt losses are 2% of sales, contribution to sales ratio is 20% and cost of funds to the company is 15%. It is expected that once the collection effort is relaxed the sales would increase by Rs.50 lakhs, average collection period would increase to 60 days and bad debt losses would increase to 4%. The net incremental benefit to the company would be
- Rs. 1.75 lakhs
 - Rs. 2.25 lakhs
 - Rs. 6.67 lakhs
 - Rs. 8.33 lakhs
 - Rs.10.00 lakhs.

(3 points)

62. Somani Metal (P) Limited is committing a capital investment at a cost of Rs.70 lakhs. The cash inflows from this project during its lifetime are as follows:

(Rs. in lakhs)					
Year	1	2	3	4	5
Cash inflows	18.0	20.0	28.0	23.0	26.0

The internal rate of return (IRR) of the project is

- 13.77%
- 14.91%
- 16.33%
- 17.94%
- 19.12%.

(2 points)

63. Mr. M.S. Sandhu, materials manager of a transformer manufacturing company procures annual requirement of the copper bolts from its supplier by four equal sized orders. The total number of copper bolts the company requires in a year is 6,00,000. The fixed cost per order is Rs.300. The market price of the each copper bolt is Rs.100. The carrying cost is 10% of the average inventory value. If Mr. Sandhu decides to change from existing system to EOQ system then how much annual monetary benefit this decision would bring to the company?
- Rs. 60,000
 - Rs.3,36,000
 - Rs.6,91,200
 - Rs.7,50,000
 - Rs.7,51,200.

(2 points)

64. The following table contains the amount of cheques issued and the amount of cheques deposited in the bank by a company:

Date	Monday 23, June	Tuesday 24, June	Wednesday 25, June	Thursday 26, June	Friday 27, June	Saturday 28, June	Monday 30, June	Tuesday 01, July
Amount of Cheque issued (Rs.)	17,000	28,000	34,000	16,000	28,000	32,000	44,000	38,000
Amount of cheque deposited in bank (Rs.)	23,000	33,000	50,000	40,000	25,000	15,000	21,000	35,000

On an average, cheque issued by the company takes five days for actual payment and a cheque deposited by the company takes three days for realization. On the morning of 23rd June the opening balance in company's books is Rs.19,000 where as it is Rs.27,000 in the bank's book. The offices of the company were closed for some IR problem during the week June 16, 2003 to June 21, 2003. The net float available to the company at the end of June 30, 2003 is

- Rs. 16,000
- Rs. 66,000
- Rs. 95,000
- Rs.1,01,000
- Rs.1,23,000.

(2 points)

65. LG Electronics Ltd is on the final stage of granting credit to the Mathura Hotels, which is likely to place a repeat order for the same number of television sets. The probability of payment in the first order is considered to be 0.85. But in case the Mathura Hotels pays for the first order the probability of default for the repeat order is 0.05. The revenue from each order is Rs.10 lakhs where as the cost of sales for each of these orders is Rs.8 lakhs. The net expected benefit from this deal to LG would be

- Rs.0.5 lakh
- Rs.1.0 lakh
- Rs.1.5 lakhs
- Rs.2.0 lakhs
- Rs.2.5 lakhs.

(1 point)

66. Garima Herbal Products Limited is considering the purchase of a new mixing machine to replace an existing machine that has a book value of Rs.1,65,000 and can be sold for Rs.1,00,000. The estimated salvage value of the old machine in five years would be zero, and it is depreciated on a straight-line basis. The new machine will contribute Rs.3,00,000 as annual cash savings over the old machine. The new machine has a life of five years. The costs of new machine is Rs.6,50,000 and can be sold for an expected amount of Rs.90,000 at the end of fifth year. Assuming straight-line depreciation, and a 35% tax rate, in the fourth year of operation the net cash flows associated with this replacement decision would be

- Rs. 64,150
- Rs. 93,550
- Rs.1,32,650
- Rs.2,22,650
- Rs.3,12,650.

(2 points)

67. Shailaja Footwears, a Kanpur based business house, has started exporting to middle east countries. Its information on sales figure is given below:

Actual Sales (Rs.)		Forecasted Sales (Rs.)	
May 2003	13,65,900	July 2003	18,50,000
June 2003	17,42,500	August 2003	19,00,000
		September 2003	19,00,000
		October 2003	21,50,000
		November 2003	21,50,000
		December 2003	19,50,000

- Cash and credit sales are expected to be 20% and 80% respectively.
- Receivables from credit sales are expected to be collected as follows: 60% of receivables, on an average, one month from the date of sale and balance 40% of receivables, on an average, two months from the date of sale.
- Miscellaneous cash purchases of Rs.5000 per month are planned from July to December 2003.
- Rs.12,000 is expected from the sale of a machine in August 2003.

Total cash receipts forecast for August 2003 would be

- Rs.17,97,500
- Rs.18,32,600
- Rs.18,37,600
- Rs.18,42,600
- Rs.19,12,000.

(3 points)

68. The Royal Synthetics is a popular Indian name in the field of sarees. The existing annual sales of the company is Rs.100 crore. Its existing credit terms are 1/10, net 30 days. Average collection period of the company is 20 days. It has been observed that fifty percent of the customers in term of sales revenue avail the cash discount incentive. In order to hasten the collection process the company is contemplating of liberalizing its existing credit terms to 2/10, net 30 days. Sales are likely to increase by Rs.10 crore and average collection period to decline to 15 days. Eighty percent of the customers in terms of sales revenue are expected to avail the cash discount incentive under liberalization scheme. If the contribution to sales ratio is 20% and the cost of funds to the company is 15%. Due to this collection relaxation program the total incremental costs to the company is

- Rs.106.73 lakhs
- Rs.111.11 lakhs
- Rs.116.42 lakhs
- Rs.126.00 lakhs
- Rs.131.00 lakhs.

(3 points)

69. Rajani Cements Limited uses the iron slag for the production of cement. The annual usage of the iron slag is 50 thousand tonnes. The price of the iron slag is Rs.980 per ton. The ordering cost is Rs.200 per order and the carrying cost is 15% of average value of inventory. At present the company procures 5 thousand tonnes of iron slag in each order and avails a discount of 2% from the supplier. The supplier has introduced 5% discount for an order size of 10 thousand tonnes and above. What would be the annual benefit to the company if they switch to the new discount offered by the supplier?

- Rs. 3,37,100
- Rs.11,32,900
- Rs.14,70,000
- Rs.18,29,566
- There will not be any monetary benefit to the company.

(2 points)

70. Radhika Oil Mill is planning for its cash to be maintained during the month of August. The manager has analysed the daily cash outgo for the month of June. Ten largest daily cash outflows are as follows:

Date	3rd June	7th June	10th June	12th June	15th June	16th June	18th June	22nd June	26th June	28th June
Cash outflow (Rs.)	55,000	40,000	35,000	48,000	23,000	68,000	42,000	33,000	58,000	29,000

It is expected that the pattern of cash outflows in the month of August will remain same as that of the month of June but the magnitude of cash outflows will be 20% more. If the finance manager desires sufficient cash to cover payments of 4 peak days during the month then the safety level of cash to be maintained in the month of August would be

- Rs.1,72,400
- Rs.2,06,880
- Rs.2,29,000
- Rs.2,74,800
- Rs.3,29,760.

(2 points)

71. Saravai Ferro Alloys (P) Limited is planning for a new plant in Ganjam, Orissa with an initial outlay of Rs.45 crore. This place has a life of 5 years. Net expected cash inflows from this project are as follows:

(Rs. in crore)					
Year	1	2	3	4	5
Cash inflows	11.00	13.50	15.50	13.00	16.50

The opportunity cost of capital of the company is 14%. The net present value (NPV) of the project is

- Rs.9.16 crore
- Rs.1.77 crore
- Rs.7.31 crore
- Rs.15.96 crore
- Rs.24.50 crore.

(2 points)

72. Mr. Utkarsh Yadav, maintenance engineer of National Power Corporation, is worried about the stock level of indication lamps to be maintained. These lamps are imported from Germany. Total 20,000 numbers of these lamps are installed in the factory. The probabilities and the values of consumption rate and lead time are as follows:

Average daily consumption (units)	Probability	Lead time (No. of days)	Probability
50	0.20	14	0.10
100	0.50	21	0.60
200	0.30	30	0.30

If the stock-out cost is estimated to be Rs.10 per unit and the carrying cost for the period under consideration is Rs.3 per unit then the optimum reorder level would be

- 2100 units
- 2800 units
- 3000 units
- 4200 units
- 6000 units.

(4 points)

END OF SECTION B

Suggested Answers

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Section A : Basic Concepts

1. Answer : (b)
Reason : Increase in the average collection period or finished goods storage period or raw materials storage period or work-in-process period cause an increase in the operating cycle period. Since average payment period is netted from the gross operating cycle period, an increase in the same will cause a reduction in the net operating cycle.
2. Answer : (c)
Reason : Spontaneous sources of financing current assets arise in the course of day to day business and they do not entail any cash outflows. Equity capital, debenture capital, term loan and preference capital are not spontaneous sources because they do not arise in the course of day to day business and they entail cash outflows. However, accrued wages are a spontaneous source of financing current assets because they arise in the course of day to day business and they do not entail any cash outflows.
3. Answer : (b)
Reason : The MM approach to capital structure assumes that information is freely available to all the investors, that firms can be classified in such a way that firms falling within a class have the same degree of business risk, that there are no corporate or personal income taxes, that investors make rational investment decisions and that there are no transaction costs.
4. Answer : (d)
Reason : The EOQ model assumes that the delivery of the item ordered is instantaneous, the ordering cost remains the same irrespective of the order size, demand or usage of the item is uniformly distributed over the planning period, the purchase price per unit of the item remains constant and the carrying cost per unit remains constant.
5. Answer : (e)
Reason : The bond yield plus risk premium approach is used to find out the cost of equity capital. It is illogical to apply for finding out the cost of bonds because the basis of this approach is the yield or cost of the bond itself. The cost of preference capital is found out by discounting the preference dividends and redemption value, and the cost of term is found out by adjusting the nominal interest cost for tax. Generally there are no explicit costs associated with trade credit and there is no logical connection between the cost of trade credit and bond yields.
6. Answer : (e)
Reason : Cost of capital cannot be defined to be equal to the equity dividends or preference dividends or the sum of both; or the interest paid on the total debt. Correctly defined, it is a weighted average of the costs of all the sources of long term finance used by a firm.
7. Answer : (b)
Reason : Overtrading means that the firm has disproportionately low level of working capital with respect to the level of sales. To define it as a state in which the firm has disproportionately high level of working capital with respect to sales or a disproportionately high level of receivables with respect to total assets or a disproportionately high level of cash with respect to total assets or low turnover of working capital is incorrect.
8. Answer : (c)
Reason : Liberalization of credit standards leads to an increase in the amount of receivables, increase in the number of customers, increase in sales, increase in bad debt losses and increase in collection costs. Hence (c) is not a logical consequence of liberalizing the credit standards.
9. Answer : (c)
Reason : Under an aggressive working capital policy the level of investment in current assets is low, there is a greater weight of short term sources for financing the current assets, and as a result of this the firm faces a higher risk of technical insolvency. Since there is a greater weight of short term sources of financing the current assets, the cost of financing tends to be low. Hence (c) is false.
10. Answer : (d)

- Reason : The term agency costs in the context of capital structure means the restrictive covenants imposed on a company by its creditors. (a), (b), (c) and (e) are incorrect interpretations of the term agency costs.
11. Answer : (c)
Reason : Holding cash balance to meet contingencies is a manifestation of precautionary motive. Transaction motive (a) is manifested when cash balance is held to meet the requirements in the normal course of business. Speculative motive (b) is manifested when cash balance is held for gaining from speculative activities. Further holding cash balance is a normal practice for all types of firms, large or small (d) and (e).
12. Answer : (a)
Reason : Holding of inventories helps in avoiding production shortages (b), availing quantity or bulk purchase discounts (c), avoiding lost sales (d) and reducing ordering costs (e). However holding inventories can not help in eliminating carrying costs (a) because carrying costs are a natural outcome of carrying costs.
13. Answer : (d)
Reason : The economic appraisal of projects is an exercise to assess the costs and benefits entailing from the project, from the point of view of the society as a whole (d) and not any particular entity like shareholders (a), short-term lenders (b), long-term lenders (c) or suppliers (e).
14. Answer : (a)
Reason : When the current ratio is less than 1.00 (a), the current assets are less than current liabilities i.e. net working capital is negative. Such a situation indicates that short term funds have been used for long term purposes. Quick ratio (Quick assets / Current liabilities) may be less than 1.00 even when the current ratio is more than or equal to 1.00. Hence (b) is incorrect. Total debt to equity is greater than 1.00 does not imply that current ratio will be less than 1.00. Hence (c) is incorrect. A positive net working capital implies that some part of the long term sources of funds have been invested in short term uses (current assets). Hence (d) is incorrect.
15. Answer : (c)
Reason : According to the traditional approach to dividend policy when the dividends increase the stock price increases and vice versa. Walter's model (a) on dividend policy explains the relationship between dividends and share price on the basis of the return on investment and the cost of capital. Gordon's model (b) on the dividend policy explains the relationship between dividends and share price on the basis of retention ratio and growth rate. Rational expectations model (d) states that the share price changes only when the dividends differ from the expectations. MM model (e) states that dividends have no impact on share price.
16. Answer : (d)
Reason : IRR considers the cash flows over the entire project life (a). It considers the time value of money (b). It is the rate of return at which the present value of benefits is equal to the present value of costs (c). It is not uniquely defined when the project entails cash inflows and outflows that are interspersed with each other. Hence (d) is false.
17. Answer : (a)
Reason : According to the net operating income approach (a) the overall capitalization rate and the cost of debt remain constant for all degrees of leverage. According to the net income approach (b) the cost of equity and the cost of debt remain unchanged when the degree of leverage varies. According to the traditional approach (c) the cost of debt and cost of equity remain constant upto certain degrees of leverage; as a result the cost of capital behaves differently for different ranges of leverage.
18. Answer : (e)
Reason : For assessing the costs and benefits of projects, incremental costs (a) and opportunity costs (b) should be considered. However, allocated overheads (c) and sunk costs (d) should not be considered because they do not influence the future cash flows.
19. Answer : (b)
Reason : If the NPV of an investment is positive, then IRR is greater than the cost of capital (b). Because when cash flows are discounted at the IRR the NPV is zero. If the cash flows are discounted at a rate less than the IRR, NPV will be positive. If a positive NPV is obtained when cash flows are discounted by the cost of capital it implies that IRR is greater than cost of

capital. IRR will be less than cost of capital if the NPV is negative when the cash flows are discounted at cost of capital. When NPV is positive the $BCR > 1$. Hence (c) and (d) are not correct.

20. Answer : (b)

Reason : Cheques deposited by a firm but not cleared by the bank result in a collection float (b). Cheques issued by a firm, but awaiting payment by the bank result in a payment float (a). Payment due from sundry debtors (c) and payments due to sundry creditors (d) do not give rise to either collection float or payment float as long as cheque receipts and payments are not involved in between.

21. Answer : (e)

Reason : Preference capital (a) equity capital (b), debenture capital (c) and term loan (d) are all long-term sources of funds which are tapped from outside the firm. Reserves and surplus (e) represent retained earnings which are generated out of profits of the firm and they are available to the firm over the long-term.

22. Answer : (c)

Reason : The terms of credit '2/10, net 45' indicate that the customer is allowed 2% discount if he pays within 10 days of purchase and after 10 days no discount is allowed, and by the end of 45 days the full payment has to be made.

23. Answer : (d)

Reason : Retained earnings (a), equity capital (b), debenture capital (c) and term loan (e) are all sources of long-term finance. However, trade credit is not a long-term source because it has a short span (less than 1 year).

24. Answer : (c)

Reason : In a cumulative preference share the unpaid dividends are all carried forward and payable (c). the rate of dividend is not variable, there is no compulsory condition that the issuer can purchase the preference share at a time before maturity, nor are the preference shares compulsorily convertible. Hence (a), (b) and (d) are not true.

25. Answer : (b)

Reason : The letter of credit is an arrangement (b) in which a bank undertakes to pay a supplier of the client of the bank, if its client fails to pay for the goods purchased from the supplier. (a), (c), (d) and (e) are incorrect interpretations of the letter of credit arrangement.

26. Answer : (d)

Reason : A firm which undertakes trading business only will not have work-in-process (d) because work-in-process arises in the context of manufacturing firms. However such a firm will have the finished goods inventory (a), cash (b), receivables (c) if it sells goods on credit and prepaid expenses if it pays for some services like insurance in advance.

27. Answer : (b)

Reason : If the average stock of raw materials is increased to two times its original level then the raw materials storage period increases to two times the original level.

28. Answer : (d)

Reason : The cost of retained earnings is considered to be equal to the rate of return required by the equity shareholders because they are retained from the earnings belonging to the equity shareholders (d). The cost of retained earnings cannot be considered to be equal to the cost of long-term loans (a) or short-term loans (b) or the rate of return on risk free investments (e) because there is no logical link between the retained earnings and these bases. Moreover the cost of retained earnings cannot be considered to be equal to zero (c) because they belong to the equity shareholders and equity has a cost.

29. Answer : (e)

Reason : When the realized yield approach is applied for finding out the cost of equity capital one of the implicit assumptions is that the equity shareholders will continue to expect the same returns from the share as in the past. It is not assumed that retained earnings are cost free (a), that the equity holders require a premium over the bondholder's return (b) or premium over the preference shareholders returns (c) or premium over the risk free return.

30. Answer : (a)
Reason : In the presence of floatation costs, the cost of external equity will always be more than the cost of existing equity capital (a). It has got no logical connection with cost of long-term or short-term debt. Hence (b), (c), (d) and (e) are all incorrect.
31. Answer : (c)
Reason : If the probability of bankruptcy is high then the assets are likely to be sold at a significant discount to their true economic values (a). Bankruptcy entails substantial expenditure on legal and administrative proceedings (b). The equity shareholders will require a higher rate of return if the firm faces the prospects of bankruptcy (d). The probability of bankruptcy is higher for a levered firm than an unlevered firm. Hence (c) is false.
32. Answer : (b)
Reason : According to Walter's model on dividend policy, if the return on investment is greater than the cost of capital, then the optimal dividend payout ratio should be 0%, because the lower the dividend payout ratio the higher will be price, in such a situation (b). Dividend payout ratios of 100% (a) 50% (c), 25% (d) and 10% (e) cannot be logically inferred from the model.
33. Answer : (c)
Reason : According to the rational expectations model on dividend policy, if dividend is declared at the expected rate, then the market price of the share will not change (c). The market price increases (a) or decreases (b) only when there is a variation from expectations. Under the given situation it cannot be inferred that the market price will change unpredictably (d) or increase by 100% (e).
34. Answer : (a)
Reason : If the annual cash inflows from a project are discounted at a zero discount rate then present value of the cash inflows will be equal to the simple sum of all the cash inflows (a). The present value will be less than the simple sum (b) when the discount rate is positive and more than the simple sum when the discount rate is negative. It cannot be logically inferred whether the present value should be equal to two times or half the simple sum. Hence (d) and (c) are incorrect.
35. Answer : (b)
Reason : The ARR gives more weight to the later receipts than earlier receipts. Hence (b) is incorrect. The ARR considers accounting profits and not cash flows (c). It considers the profits over the entire life of the project (a) and it serves as a measure of profitability of the investment (d).
36. Answer : (d)
Reason : NPV gives more weight to earlier cash flows than later cash flows (a). NPVs are additive in nature (b). NPV considers the entire life of the project (c). NPV represents the contribution of the project to the wealth of the equity shareholder. Hence (d) is false.
37. Answer : (e)
Reason : The most suitable criterion for appraisal of mutually exclusive projects which provide similar service but entail different patterns of cash outflows and different life spans, is the annual capital charge. In such situations IRR, ARR, NPV and pay back period are not useful. Hence (e) is correct.
38. Answer : (b)
Reason : Infrastructure projects are highly capital intensive (a), carry a high level of risk (c) and require financing over long-term (d). Further they have a long gestation period. Hence (b) is false.
39. Answer : (c)
Reason : Poor infrastructure in an economy puts the domestic enterprises at a disadvantage vis-à-vis their foreign competitors (a) and leads to time and cost over runs of the projects (b). Good infrastructure help in attracting FDIs (d). However, good infrastructure will not necessarily ensure that all projects are profitable; there are other factors also. Hence (c) is incorrect.
40. Answer : (b)
Reason : When a high degree of uncertainty prevails with regard to the future cash flows, the firm should maintain adequate cash balance and have an overdraft arrangement instead of investing all its cash in equity shares. Hence (a) is false and (b) is true. When a firm has ready access to non-bank funds it can keep a higher proportion of funds in intercorporate deposits than free cash (c). When the management is risk averse it should maintain a larger proportion of funds in the form of free cash than equity shares and intercorporate deposits. Hence (a), (c) and (d) are false and (b) is true.

Section B : Problems

41. Answer : (b)

Reason : Value of a share after the rights issue $(V_t) = \frac{NP_o + S}{N+1}$

where symbols are in standard use

Theoretical value of a right $(V_t) = \frac{P_o - S}{N+1}$

In the question $V_t = \text{Rs.}4$, $V_o = \text{Rs.}60$ $N=2$

Substituting the values we get

$$60 = \frac{2P_o + S}{3} \Rightarrow 180 = 2P_o + S = P_o$$

$$4 = \frac{P_o - S}{3} \Rightarrow 12 = P_o - S \Rightarrow 12 + S$$

$$\therefore 180 = 2(12 + S) + S = 24 + 3S \Rightarrow S = 52$$

42. Answer : (c)

Reason : According to Walter's Model

$$P_o = \frac{D}{k} + \frac{r/k(E-D)}{k}, \text{ where symbols are in standard use.}$$

Substituting the given values we get

$$\begin{aligned} &= \frac{3}{0.14} + \frac{\frac{0.15}{0.14}(7.5-3)}{0.14} \\ &= 21.43 + 34.44 \\ &= 55.87 \end{aligned}$$

Number of shares outstanding = 2,50,000

$$\begin{aligned} \therefore \text{Market value of equity} &= P_o \times N = 55.87 \times 2,50,000 \\ &= \text{Rs. } 1,39,67,500 \end{aligned}$$

43. Answer : (e)

Reason : Cost of Credit = $\frac{\text{Rate of Discount}}{1 - \text{Rate of Discount}} \times \frac{\text{Number of days in year}}{(\text{Credit Period} - \text{Discount Period})}$

$$= \frac{0.02}{0.98} \times \frac{360}{(45-10)} \times 100 = 20.99\%$$

44. Answer : (d)

Reason : Current market value of the firm = Rs.(49×85 + 222.60) million
= Rs.4387.60 million

Market value after restructuring = Rs.(39 × 100 + 1222.60) million
= Rs.5122.60 million

∴ Value lost if the firm doesn't go for restructuring = Rs.(5122.60 – 4387.60) million = Rs.735 million

45. Answer : (b)

Reason : The capital structure of Vexser after the issue of 15% debentures will be

	<u>Source</u>	<u>Amount (in Rs.)</u>
	Ordinary shares	40,00,000
10%	Preference shares	10,00,000
14%	Debentures	30,00,000
15%	Debentures	20,00,000
	Total:	100,00,000

Cost of equity prior to this change can be calculated as follows:

$$k_e = \frac{D_1}{P_o} + g = \frac{2}{20} + 0.07 = 17\%$$

Cost of equity after the change in capital in capital structure

$$k_e = \frac{3}{15} + 0.07 = 27\%$$

$$WACC = w_e k_e + w_p k_p + w_d k_d (1 - T)$$

Substituting the given values, we get

$$WACC = 0.40 \times 0.27 + 0.10 \times 0.10 + 0.30 \times 0.07 + 0.20 \times 0.075 = 0.154 = 15.40\%$$

46. Answer : (d)

$$\text{Reason : Cost of equity} = \frac{PAT}{NW} = \frac{PAT/N}{NW/N} = \frac{EPS}{BVPS}$$

Substituting the given values, we get

$$k_e = \frac{3.60}{18} = 20\%$$

According to Dividend Discount Model

$$P_o = \frac{D_1}{k_e - g} \Rightarrow k_e = \frac{D_1}{P_o} + g$$

$$\therefore 0.20 = \frac{3(1+g)}{33} + g \Rightarrow 6.6 = 3 + 36g$$

$$\therefore g = \frac{3.6}{36} = 0.10\%$$

47. Answer : (a)

Reason : According to the Traditional approach

$$P = m \left(D + \frac{E}{3} \right)$$

where symbols are in their standard use

Substituting the values, we get

$$P = 6 \left(0.40E + \frac{E}{3} \right) = E(2.4 + 2)$$

$$\therefore \frac{P}{E} = 4.4$$

48. Answer : (d)

Reason : Maximum Permissible Bank Finance (MPBF) as per Tandon Committee can be calculated as follows:

I Method

$$MPBF = 75\% \text{ of (CA-CL other than bank borrowings)}$$

Current Assets = 760 lakhs

Bank borrowings – 20% of CA = $0.20 \times 760 = 152$ lakhs

Current Liabilities other than bank borrowings = $480 - 152 = 328$ lakhs

$\therefore$ MPBF = $0.75 (760 - 328) = 324$ lakhs

II Method

$$\begin{aligned}\text{MPBF} &= 75\% \text{ of CA} - \text{CL other than Bank borrowings} \\ &= 0.75 \times 760 - 328 \text{ lakhs} \\ &= 570 - 328 \text{ lakhs} \\ &= 242 \text{ lakhs}\end{aligned}$$

49. Answer : (b)

$$\text{Reason : Average conversion period} = \frac{\text{Average stock of WIP}}{\text{Average daily cost of production}}$$

$$\text{Average stock of WIP} = \frac{\text{Opening WIP} + \text{Closing WIP}}{2}$$

Substituting the given values, we get

$$\text{Average stock of WIP} = \frac{x + 1.10x}{2} = 1.05x$$

Substituting the values in the formula, we get

$$3 = \frac{1.05x}{35} \Rightarrow x = 100 \text{ lakhs}$$

$\therefore$ Closing stock of WIP = Rs. 110 lakhs

50. Answer : (c)

Reason : The market price per share is given by

$$P_o = \frac{P_1 + D_1}{1 + K_e} \text{ where symbols are in standard use.}$$

If no dividends are declared

$$150 = \frac{P_1 + 0}{1.12}$$

$$P_1 = 168$$

Net Income = Rs.2 Crores

Investments budget = Rs.4 crores

Amount to be raised by issue of new shares = Rs.2 crore

$$\therefore \text{Number of shares to be issued} = \frac{2,00,00,000}{168} = 1,19048$$

51. Answer : (b)

$$\text{Reason : Average payment period} = \frac{\text{Average balance of trade creditors}}{\text{Average daily purchase}}$$

$$\begin{aligned}\text{Average balance of trade creditors} &= \frac{\text{opening creditors} + \text{closing creditors}}{2} \\ &= 21,25,000\end{aligned}$$

$$\text{Average daily purchases} = \frac{\text{Annual Credit Purchases}}{\text{Number of days in a year}} = \frac{52,92,500}{365} = 14,500$$

$$\text{Average payment period} = \frac{21,25,000}{14,500} = 146.55 \text{ days} \approx 147 \text{ days}$$

52. Answer : (d)

Reason : The investor will dispose of his share holding in company X .

$$\begin{aligned}\text{The amount realized by him} &= 9000 \times 120 \\ &= \text{Rs. } 10,80,000\end{aligned}$$

The amount so realized by sale of shares in company X along with additional funds of Rs. 600,000 by borrowing @ 6%, i.e. Rs.16,80,000 will be invested in shares of company Y @ Rs.100 each

Through the above shift, from company X to company Y the investor will gain as follows:

Present Income in X Ltd.

$$\begin{aligned}&= \frac{9000}{90,000} \times (18,00,000 - 3,60,000) \\ &= \text{Rs. } 1,44,000\end{aligned}$$

Proposed Income in Y Ltd.

$$\begin{aligned}&= \frac{16,800}{1,50,000} \times 18,00,000 - 36,000 \\ &= 2,01,600 - 36,000 \\ &= \text{Rs. } 1,65,600\end{aligned}$$

$$\text{Increase in Income} = 1,65,600 - 1,44,000 = \text{Rs. } 21,600$$

53. Answer : (b)

Reason : Cost of preference capital can be calculated from the following:

$$P_o = \sum_{t=1}^n \frac{D_t}{(1+k_p)^t} + \frac{P_n}{(1+k_p)^n}$$

where symbols are in their standard use.

Substituting the vine values, we get

$$95 = 12 \times \text{PVIFA}(k_p, 15) + 110 \times \text{PVIF}(k_p, 15)$$

$$\text{At } k_p = 13\%$$

$$\text{RHS} = 12 \times 6.462 + 110 \times 0.160 = 95.144$$

$$\text{AT } k_p = 14\%$$

$$\text{RHS} = 12 \times 6.142 + 110 \times 0.140 = 89.10$$

Interpolating, we get

$$\begin{aligned}k_p &= 13\% + \left(\frac{95.144 - 95.00}{95.144 - 89.10} \right) \times 1\% \\ &= 13.02\%\end{aligned}$$

54. Answer : (e)

Reason : Market value of Debt = $150 \times 25,000 = \text{Rs. } 37,50,000$

$$\begin{aligned}\text{Market value of Equity} &= \frac{\text{Net income}}{k_e} = \frac{20,00,000 - 5,25,000}{0.16} \\ &= \text{Rs. } 92,18,750\end{aligned}$$

$$\therefore \text{Market value of the firm} = \text{Rs. } 92,18,750 + 37,50,000$$

55. Answer : (d)

Reason : Finished goods storage period = $\frac{\text{Average stock of finished goods}}{\text{Average daily cost of goods sold}}$

$$\begin{aligned}\text{Average stock of Finished goods} &= \text{Rs. } \frac{(650 + 1050) \text{ lakhs}}{2} \\ &= \text{Rs. } 850 \text{ lakhs}\end{aligned}$$

$$\begin{aligned}\text{Average daily cost of goods sold} &= \text{Rs.} \frac{650 + 12,000 + 4,500 + 35,000 - 1050 \text{ lakhs}}{360} \\ &= \text{Rs.} \frac{51,500}{360} \text{ lakhs} \\ &= \text{Rs.} 141.94 \text{ lakhs}\end{aligned}$$

$$\text{Finished goods storage period} = \frac{850}{141.94} = 5.99 \text{ days} \approx 6 \text{ days}$$

56. Answer : (b)

$$\text{Reason : Wealth ratio (w}_t\text{)} = \frac{D_t + P_t}{P_{t-1}}$$

Yield for an n-year period is $(W_1 \times W_2 \times \dots \times W_n)^{1/n} - 1$

The wealth ratios for Beta Ltd will be as follows:

	1	2	3	4	5
Wealth Ratio	1.125	1.143	0.78	1.242	1.026

$$\begin{aligned}\text{Yield} &= (1.125 \times 1.143 \times 0.78 \times 1.242 \times 1.026)^{1/5} - 1 \\ &= 1.0503 - 1 \\ &= 0.0503 \\ &= 5.03\%\end{aligned}$$

57. Answer : (d)

Reason : As per Net Operating Income Approach

$$k_e = \frac{\text{NOI} - \text{INT}}{S}$$

where symbols are in their standard use

$$\therefore S = \frac{1,00,000 - 30,000}{0.14} = \text{Rs.} 5,00,000$$

Market value of Debt = Rs.5,00,000 (given)

$\therefore$ Value of the firm = Rs.10,00,000

$$\text{Overall cost of capital } k_o = \frac{\text{NOI}}{V} = \frac{1,00,000}{10,00,000} = 10\%$$

As per NOI approach, overall cost of capital will remain constant even if the debt-equity ratio changes.

$$k_e = k_o + (k_o - k_d) \frac{D}{E}$$

$$\begin{aligned}\therefore k_e &= 0.10 + (0.10 - 0.06) \frac{5}{4} \\ &= 0.10 + 0.05 \\ &= 0.15 = 15\%\end{aligned}$$

58. Answer : (e)

Reason:

Source of Capital	Cost (%)	Range of new financing (Rs. in million)	Breaking point (Rs. in million)	Range of Total New financing (Rs. in million)
Equity	15.00	0 – 10	$\frac{10}{0.45} = 22.22$	0 – 22.22
	16.50	10-30	$\frac{30}{0.45} = 66.67$	22.22-66.67
	18.00	30 & above	-	66.67 & above
Preference	14.50	0-1	$\frac{1}{0.05} = 20.00$	0-20.00
	15.00	1& above	-	20.00 & above
Debt	7.5	0-15	$\frac{15}{0.50} = 30.00$	0-30.00
	8.00	15-40	$\frac{40}{0.50} = 80.00$	30.00-80.00
	8.40	40 & above	-	80.00 & above

Weighted marginal cost of capital for the range of 40 to 50 million is

$$\begin{aligned}
 &= w_e k_e + w_p k_p + w_d k_d \\
 &= 0.45 \times 0.165 + 0.05 \times 0.15 + 0.50 \times 0.08 \\
 &= 0.12175 \\
 &= 12.17\%
 \end{aligned}$$

59. Answer : (d)

Reason : Gross operating cycle = Raw material storage period + Conversion period + Finished goods storage period + Average collection period

Substituting the given values, we get

$$124 = \text{Raw material storage period} + 3 + 25 + 40$$

$$\therefore \text{Raw material storage period} = 56 \text{ days}$$

60. Answer : (c)

Reason : The annual output is 2 million kg or 2×10^6 kg. The set-up cost of each production run is Rs.6,000.

Price of the chemical = Rs.800/kg.

Margin = 15%

$$\therefore \text{Cost of sales} = 800(1 - 0.15) = \text{Rs. } 680/\text{kg.}$$

$$\therefore \text{Cost of carrying inventory} = 680 \times 0.09 = \text{Rs. } 61.2$$

$$\begin{aligned}
 \therefore \text{Optimum quantity of production} &= \sqrt{\frac{2UP}{S}} \\
 &= \sqrt{\frac{2 \times 2 \times 10^6 \times 6000}{61.2}} \\
 &= 19802.95 \text{ kg} \\
 &; 198 \text{ hundred kg}
 \end{aligned}$$

61. Answer : (a)

Reason : Increase in profit due to increase in sales

$$= 50 \times 0.2$$

$$= \text{Rs. 10 lakhs}$$

Existing amount of receivables

$$= \frac{200}{360} \times 45 = \text{Rs. 25 lakhs}$$

Amount of receivables on existing sales after collection relaxation

$$= \frac{200}{360} \times 60 = \text{Rs. 33.33 lakhs}$$

So, increase in receivables on existing sales

$$= 33.33 - 25.00$$

$$= \text{Rs. 8.33 lakhs}$$

Amount of receivables on additional sales

$$= \frac{50}{360} \times 60 = \text{Rs. 8.33 lakhs}$$

Investment in the receivables on additional sales

$$= 8.33 \times 0.80 = 6.67$$

Incremental investment in receivables

$$= 8.33 + 6.67 = \text{Rs. 15 lakhs}$$

Cost of financing additional investment in receivables @ 15%

$$= 15 \times 0.15 = \text{Rs. 2.25 lakhs}$$

Existing bad debts losses

$$= 200 \times 0.02 = \text{Rs. 4 lakhs}$$

Bad losses after collection relaxation

$$= 250 \times 0.04 = \text{Rs. 10 lakhs}$$

So, increase in bad debts losses

$$= 10 - 4 = \text{Rs. 6.0 lakhs}$$

So, incremental costs = 2.25 + 6.00 = Rs. 8.25.

So, the net incremental benefit

$$= 10 - 8.25$$

$$= 1.75$$

∴ the net incremental benefit is Rs. 1.75 lakhs

62. Answer : (d)

Reason : Let the IRR be r

Then

$$70 = \frac{18}{(1+r)} + \frac{20}{(1+r)^2} + \frac{28}{(1+r)^3} + \frac{23}{(1+r)^4} + \frac{26}{(1+r)^5}$$

at $r = 18\%$, the RHS = 69.89

$r = 17\%$, the RHS = 71.61

By interpolation we get

$$\frac{r-17}{70-71.61} = \frac{18-17}{69.89-71.61}$$

$$\text{or } r-17 = \frac{-1.61}{-1.72} = 0.936$$

$$\text{or } r = 17.936\% ; 17.94\%.$$

63. Answer : (c)

Reason : Existing cost of inventory

$$= 4 \times 300 + \frac{1,50,000}{2} \times 100 \times 0.10$$

$$= 1200 + 7,50,000$$

$$\text{EOQ} = \sqrt{\frac{2UP}{C}} = \sqrt{\frac{2 \times 6,00,000 \times 300}{100 \times 0.1}}$$

$$= 6000$$

∴ Cost of inventory in the EOQ system

$$= \frac{6,00,000}{6,000} \times 300 + \frac{6,000}{2} \times 100 \times 0.1$$

$$= 30,000 + 30,000$$

$$= 60,000$$

$$\therefore \text{Benefit} = 7,51,200 - 60,000 = \text{Rs.} 6,91,200$$

64. Answer : (d)

Reason :

Day		Books of Company (Rs.)	Book of the Bank (Rs.)	Float (Rs.)
23 rd June	Opening balance	19,000	27,000	8,000
	Cheque issued = Rs. 17,000 Cheque deposited = Rs. 23,000	19,000 + 23,000 – 17,000 = 25,000	27,000 + 0 – 0 = 27,000	8,000
24 th June	Cheque issued = Rs. 28,000 Cheque deposited = Rs. 33,000	25,000 + 33,000 – 28,000 = 30,000	27,000 + 0 – 0 = 27,000	– 3000
25 th June	Cheque issued = Rs. 34,000 Cheque deposited = Rs. 50,000	30,000 + 50,000 – 34,000 = 46,000	27,000 + 0 – 0 = 27,000	–19000
26 th	Cheque issued = Rs. 16,000 Cheque deposited = Rs. 40,000	46,000+40,000 – 16,000 = 70,000	27,000 + 23,000 – 0=50,000	–20,000
27 th	Cheque issued = Rs. 28,000 Cheque deposited = Rs. 25,000	70,000+25,000–28,000 = 67,000	50,000 + 33,000 – 0= 83,000	16,000
28 th	Cheque issued = Rs. 32,000 Cheque deposited = Rs. 15,000	67,000+15000–32000 = 50,000	83,000 +50,000– 17,000 = 116000	66,000
30 th	Cheque issued = Rs. 44,000 Cheque deposited = Rs.21,000	50,000 + 21,000 – 44,000 = 27,000	116000+40,000 – 28,000 = 1,28,000	101000
1 st	Cheque issued = Rs. 38,000 Cheque deposited = Rs. 35,000	27,000 + 35,000 – 38,000=24,000	1,28,000 + 25,000 – 34,000 = 1,19,000	95,000

So, the net float available to the company at the end of 30th June is Rs. 1,01,000

65. Answer : (d)

Reason : The net weighted / financial benefit on the initial order is

$$0.85 \times (10 - 8) + 0.15(-8)$$

$$= 0.50$$

The net weighted financial benefit from the repeat order is

$$0.95 \times (2) + 0.05(-8)$$

$$= 1.5$$

So total net expected financial benefit is (0.5 + 1.5) or 2 lakhs.

66. Answer : (d)

Reason :

	Year	0	1	2	3	4	5
A	Net investment in new machine	(5,50,000)					
B	Saving in costs		3,00,000	3,00,000	3,00,000	3,00,000	3,00,000
C	Incremental Depreciation		79,000	79,000	79,000	79,000	79,000
D	Pre-tax profit		2,21,000	2,21,000	2,21,000	2,21,000	2,21,000
E	Taxes		77,350	77,350	77,350	77,350	77,350
F	Post-tax profit		1,43,650	1,43,650	1,43,650	1,43,650	1,43,650
G	Initial Cash flow	(5,50,000)					
H	Operating cash flow		2,22,650	2,22,650	2,22,650	2,22,650	2,22,650
I	Terminal cash flow						90,000
J	Net cash flow	(5,50,000)	2,22,650	2,22,650	2,22,650	2,22,650	3,12,650

So, the net cash flow during forth year is Rs. 2,22,650.

67. Answer : (c)

Reason : Cash sales $= 19,00,00 \times 0.20 = \text{Rs. } 3,80,000$
Collection of Credit sales (July) $= 18,50,000 \times 0.60 \times 0.8 = \text{Rs. } 8,88,000$
Collection of Credit sales (June) $= 17,42,500 \times 0.40 \times 0.8 = \text{Rs. } 5,57,600$
Sale of machine = Rs. 12,000
Total Rs. 18,37,600

68. Answer : (c)

Reason : Existing cost of carrying receivables

$$= \frac{100}{360} \times 20 \times 0.15 = \text{Rs. } 0.8333 \text{ crore}$$

Cost of carrying receivables after liberalization

$$= \frac{110}{360} \times 15 \times 0.15 = 0.6875 \text{ crore}$$

Saving in the cost of carrying receivables

$$= 0.8333 - 0.6875 = \text{Rs. } 0.1458 \text{ crore} \dots \dots \dots (A)$$

The cost of funds invested in the receivables arising out of new sales

$$= \frac{10}{360} \times 15 \times 0.8 \times 0.15 = \text{Rs. } 0.0500 \text{ crore} \dots \dots \dots (B)$$

Amount of discount presently paid

$$= \text{Rs.}100 \times 0.01 \times \frac{50}{100} = \text{Rs.}0.5 \text{ Crore}$$

Amount of discount payable after liberalization

$$= 110 \times 0.02 \times 0.80 = \text{Rs.}1.76 \text{ crore}$$

The additional amount of discount payable

$$= 1.76 - 0.50 = \text{Rs.}1.26 \text{ crore} \dots \dots \dots (c)$$

$$\begin{aligned} \text{Thus the total incremental cost} &= B + C - A \\ &= 1.26 + 0.05 - 0.1458 \\ &= \text{Rs.}1.1642 \text{ crore} \\ &; \text{Rs.}116.42 \text{ lakhs} \end{aligned}$$

69. Answer : (b)

Reason : Existing cost to the company :

Cost of iron slag + Ordering cost + Carrying cost

$$= 50,000 \times 980 \times (1-0.02) + \frac{50,000}{5,000} \times 200 + \frac{5000}{2} \times 980 (1-0.02) \times 0.15$$

$$= 48020000 + 2000 + 360150$$

$$= 48382150$$

If the company switches to the new discount then the total cost would be

$$= 50,000 \times 980 (1-0.05) + \frac{50,000}{10,000} \times 200 + \frac{10,000}{2} \times 980 (1-0.05) \times 0.15$$

$$= 4,65,50,000 + 1,000 + 6,98,250$$

$$= 472,49,250$$

So the total benefit to the company would be

$$4,83,82,150 - 4,72,49,250 = \text{Rs.} 11,32,900$$

70. Answer : (d)

Reason : The average cash outflow during the 4 peak days in the month of June was

$$\frac{68,000 + 58,000 + 55,000 + 48,000}{4} = \text{Rs.}57,250$$

As the magnitude of cash out flows in the month of August is 20% more than that in the month of June, so the expected average cash out flows during the 4 peak days in the month of August would be

$$\text{Rs.} 57,250 \times 1.2 = \text{Rs.} 68,700$$

So the safety level of cash to be maintained is $4 \times 68,700$ or Rs. 2,74,800

71. Answer : (b)

$$\begin{aligned} \text{Reason : NPV} &= -45 + \frac{11.00}{1.14} + \frac{13.50}{(1.14)^2} + \frac{15.50}{(1.14)^3} + \frac{13.00}{(1.14)^4} + \frac{16.50}{(1.14)^5} \\ &= -45 + 9.65 + 10.39 + 10.46 + 7.70 + 8.57 \\ &= \text{Rs.}1.77 \text{ crore.} \end{aligned}$$

72. Answer : (c)

Reason : Expected daily consumption rate

$$50 \times 0.20 + 100 \times 0.50 + 200 \times 0.30$$

$$= 120 \text{ units per day}$$

Expected lead time

$$14 \times 0.10 + 21 \times 0.60 + 30 \times 0.30$$

$$= 23 \text{ days}$$

So, Normal consumption during lead time is $120 \times 23 = 2,760$ units

The possible levels of consumption rate

Daily Consumption		Lead time		Possible levels of consumption	
Units	Probability	Lays	Probability	Units	Probability
50	0.20	14	0.10	700	0.02
		21	0.60	1050	0.12
		30	0.30	1500	0.06
100	0.50	14	0.10	1400	0.05
		21	0.60	2100	0.30
		30	0.30	3000	0.15
200	0.30	14	0.10	2800	0.03
		21	0.60	4200	0.18
		30	0.30	6000	0.09

Levels of safety stocks and associated costs.

Stock	Stock Outs	Probability	Expected Stock Outs	Expected Stock Outs Cost	Carrying Cost	Total Cost
3240	0	0	0	0	Rs.9,720	Rs.9,720
1440	1800	0.09	162	Rs.1620	Rs.4320	Rs.5940
240	3000	0.09	270			
	1200	0.18	216			
			486	4860	720	Rs.5580
40	3200	0.09	288			
	1400	0.18	252			
	200	0.15	30			
			570	5700	120	Rs.5820

As the total cost is minimum when safety stock is 240 units i.e. reorder level should be $2760 + 240$ or 3000 units