

Question Paper

Financial Management - I (141) : 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. If a huge amount of Rs.50 crores is borrowed in the call money market, then the interest rate is decided by
 - a. The lender
 - b. The borrower
 - c. The Reserve Bank of India as the amount involved is huge
 - d. Both (a) and (b) above
 - e. Both (a) and (b) above but within the maximum limit prescribed by RBI.
2. Mr. Anand who is interested in borrowing funds should choose which of the following schemes?

Scheme A: Rate of interest is 10% p.a. compounded annually.
Scheme B: Rate of interest is 10% p.a. compounded four times a year.
Scheme C: Rate of interest is 10% p.a. compounded daily.
Scheme D: Rate of interest is 10% p.a. compounded half-yearly.

 - a. Scheme A
 - b. Scheme B
 - c. Scheme C
 - d. Scheme D
 - e. Any of the above gives the same result.
3. M/s. PeeCee Ltd. has received the third highest credit rating for its issue of commercial paper. If its fund based working capital limit is Rs.3 crores, and assuming other requirements are met which of the following is **true**?
 - a. It can issue commercial paper within the maximum limit of Rs.3 crores
 - b. It can issue commercial paper but the amount should not be less than Rs.5 lakhs
 - c. It can issue commercial paper to any amount
 - d. It can issue commercial paper provided its fund based working capital limit is raised to Rs.4 crores
 - e. It cannot issue commercial paper.
4. Which of the following is/are **true** regarding the relationship between the real and nominal rate of interest?
 - I. Expected nominal rate of interest will be less than the real rate of interest if the expected rate of inflation and risk premium are more than zero.
 - II. Expected nominal rate of interest and real rate of interest will be equal if expected rate of inflation and risk premium are zero.
 - III. If expected rate of inflation is equal to risk premium, then expected nominal rate of interest will exceed the real rate of interest by twice the risk premium.
 - a. Only (I) above
 - b. Only (II) above
 - c. Only (III) above
 - d. Both (II) and (III) above
 - e. Both (I) and (II) above.

5. When the market is low which of the following methods of raising capital is preferred?
 - a. Initial public offer
 - b. Bought-out deal
 - c. Private placement
 - d. Rights issue
 - e. Either (c) or (d) above.
6. Which of the following is/are **true** regarding the capital recovery factor?
 - I. It is the inverse of the PVIF factor.
 - II. It represents the amount that has to be invested at the end of every year for a period of 'n' years at the rate of interest 'k' in order to accumulate Re.1 at the end of the period.
 - III. It can be applied to find out the amount to be invested periodically to liquidate a loan over a specified period at a given rate of interest.
 - a. Only (II) above
 - b. Only (III) above
 - c. Both (II) and (III) above
 - d. Both (I) and (III) above
 - e. None of the above.
7. In the foreign exchange market if an agreement on a transaction took place on July 1, 2003 and the value date is July 3, 2003, then the transaction is said to be a part of the
 - a. Spot market
 - b. Tom market
 - c. Cash market
 - d. Ready market
 - e. Forward market.
8. Risk arising due to the uncertainty of the time element in buying and selling the securities without significant price concession is referred to as
 - a. Market risk
 - b. Inflation risk
 - c. Liquidity risk
 - d. Purchasing power risk
 - e. Both (b) and (d) above.
9. In a forex market if an investor wants to hedge his forex payments and have minimum risk, which of the following should the investor prefer?
 - a. Sell the forex futures
 - b. Enter into a forward contract to purchase the required forex
 - c. Enter into a call option to purchase the required forex
 - d. Buy forex futures
 - e. Enter into a put option to sell the required forex.
10. Which of the following is/are **not true** regarding variability?
 - I. Higher the range, higher the standard deviation.
 - II. Of the two probability series, the one, which has the highest mean value, has the highest standard deviation.
 - III. Higher the variance, higher the standard deviation.
 - a. Only (I) above
 - b. Only (II) above
 - c. Only (III) above
 - d. Both (I) and (II) above
 - e. None of the above.

11. An investor places an order with a broker in the stock exchange to sell 100 shares of X Ltd at a minimum price of Rs.150 per share including brokerage charges of 1%. Such an order is referred to as
- Limited discretionary order
 - Best rate order
 - Immediate order
 - Limit order
 - Stop loss order.
12. The amount of risk reduction achieved by diversification does **not** depend on which of the following factors?
- Degree of correlation of the stocks under consideration.
 - Number of stocks involved in the portfolio.
 - The market return.
 - The covariance between the stocks and the market return.
- Only (II) above
 - Only (III) above
 - Only (IV) above
 - Both (III) and (IV) above
 - (II), (III) and (IV) above.
13. Which of the following is/are **true** according to CAPM if investors become more risk averse due to changing economic conditions?
- Risk premium increases.
 - Required rate of return on all securities increases.
 - Slope of SML decreases.
- Only (I) above
 - Only (II) above
 - Both (I) and (II) above
 - Both (II) and (III) above
 - All (I), (II) and (III) above.
14. Which of the following is **true** if beta of a stock is equal to one?
- The required rate of return on the stock is equal to the risk-free rate of return plus market return according to the CAPM approach
 - According to the Single index model, the required rate of return on the stock will be more than the market return, if the alpha intercept of the Characteristic Regression Line is positive
 - The stock is said to be correctly priced according to the CAPM approach
 - If the market return varies by 10%, the return on stock varies by 1%
 - The stock is said to be a defensive stock.
15. Which of the following risks is most important to an investor who is well-diversified in common stocks?
- Market risk
 - Total risk
 - Financial risk
 - Business risk
 - Liquidity risk.

16. Which of the following is **true** regarding the going concern value of a business?
- It is the amount that is required to be spent if it were to replace its existing assets in the current condition
 - It is generally the minimum value that a company might accept if it wishes to sell its business
 - It is the price that is prevailing in the market at which the assets are being sold or bought
 - It is always higher than the liquidation value, the difference accounting for the usefulness of assets and value of intangibles
 - It is similar to the book value of the assets.
17. According to CAPM a security's required rate of return is equal to
- Return on government securities + a premium based on unsystematic risk
 - Return on corporate securities + a premium based on systematic risk
 - Return on individual securities + a premium equal to beta
 - Return on government securities + a premium based on market risk
 - Return on corporate securities – a premium on systematic risk.
18. Which of the following is/are **true** with regard to the convertible debentures?
- The conversion value is the minimum value of the convertible based on the current price of the issuer's stock.
 - In case of optionally convertible debentures, on the exercise of the option of conversion the holder of the instrument has to pay the issuer the specified amount.
 - Conversion premium is the difference between the conversion price and the conversion value.
- Only (I) above
 - Only (II) above
 - Both (I) and (II) above
 - Both (I) and (III) above
 - Both (II) and (III) above.
19. Beta values of a risk free security and a market portfolio are respectively
- Unity and more than unity
 - Unity and less than unity
 - Zero and unity
 - Unity and zero
 - Negative unity and positive unity.
20. Which of the following is/are **not true** regarding the dividend ratios?
- Dividend yield is always expressed as a percentage of earnings of the company.
 - Dividend yield is calculated as dividend pay-out ratio divided by the P/E ratio.
 - It is desirous to invest in a company having a high dividend yield irrespective of its profitability and liquidity.
- Only (II) above
 - Only (III) above
 - Both (I) and (II) above
 - Both (I) and (III) above
 - None of the above.

21. Which of the following statements is /are **true** regarding the value of a bond when the required rate of return is greater than coupon rate?
- I. The value of the bond will decrease with the passage of time.
 - II. The value of the bond is less than the par value.
 - III. The discount on the bond declines as maturity approaches.
- a. Only (I) above
 - b. Only (II) above
 - c. Only (III) above
 - d. Both (I) and (III) above
 - e. Both (II) and (III) above.
22. Which of the following ratios **does not** measure the long-term solvency of the firm?
- a. Fixed charges coverage ratio
 - b. Debt-assets ratio
 - c. Return on equity
 - d. Debt service coverage ratio
 - e. (a), (c) and (d) above.
23. Which of the following statements is/are **true** regarding a warrant?
- I. The actual value of warrant will be equal to the theoretical value on the expiry date.
 - II. The premium associated with a warrant increases as the expiry date approaches.
 - III. The greater the price volatility of the underlying stock, the larger the premium.
- a. Only (I) above
 - b. Only (II) above
 - c. Only (III) above
 - d. Both (II) and (III) above
 - e. Both (I) and (III) above.
24. Which of the following is **true** regarding the earnings power of two companies?
- a. Pre-tax earnings being same, higher the tax rate, lower the earnings power
 - b. Debt-equity ratio and pre-tax earnings being same, higher the interest rate, lower the earnings power
 - c. Total assets being same, higher the debt-equity ratio, higher the earnings power
 - d. Pre-tax earnings being the same, greater the total assets, higher the earnings power
 - e. Sales and pre-tax earnings being the same, greater the total assets turnover ratio, higher the earnings power.
25. Which of the following statements is/are **true** regarding the valuation of bonds?
- I. Bonds yield curves have a downward slope when long maturity bonds have higher interest rates than short maturity bonds.
 - II. The long term bonds are more sensitive to discount rate movements than the short term bonds.
 - III. As YTM increases the price decreases (in percentage terms) more in case of low coupon rate bonds than in case of high coupon rate bonds.
- a. Only (I) above
 - b. Only (II) above
 - c. Both (I) and (II) above
 - d. Both (II) and (III) above
 - e. All (I), (II) and (III) above.

26. Which of the following is/are **true** regarding the effect on return on equity, others things remaining constant?
- Greater the amount of sales, lower the return on equity
 - Lower the equity multiplier, lower the return on equity
 - Higher the assets turnover, lower the return on equity
 - Lower the debt-assets ratio, higher the return on equity
 - Higher the return on assets, lower the return on equity.
27. Three bonds A, B and C with same coupon rate, par value and maturity have yields to maturity (YTM) of 10%, 8% and 12% respectively. Then which of the following expressions is/are **true** regarding the value of bonds A, B and C?
- $A > B > C$
 - $A > C > B$
 - $B > A > C$
 - $C > A > B$
 - $C > B > A$.
28. Which of the following results in an increase in working capital of a company?
- An increase in outstanding rent
 - An increase in investments
 - A decrease in depreciation
 - A decrease in the amount of provision for tax
 - An increase in gross fixed assets.
29. Which of the following statements is/are **true** regarding financial statement analysis?
- Trade creditors use the financial analysis to know the liquidity position of the firm.
 - Long-term creditors use the financial statement analysis to know the long-term solvency of the firm.
 - Investors use the financial statement analysis to know the earnings of the firm.
- Only (I) above
 - Only (II) above
 - Both (I) and (II) above
 - Both (II) and (III) above
 - All (I), (II) and (III) above.
30. Which of the following is the source of working capital?
- Raising funds through 3-month commercial paper
 - Discounting bills receivable
 - Issue of partly convertible debentures
 - Issue of bonus shares
 - Redemption of preference shares.
31. Which of the following statements is/are **true** regarding liquidity ratios?
- The ratios like receivables turnover ratios and inventory turnover ratios are also used to measure liquidity.
 - A firm, which has large amount of accounts receivable, is more liquid than a firm with a high amount of inventories in its current assets, though both the firms may have the same current ratio.
 - Current ratio is useful in measuring and predicting the future fund flows.
- Only (I) above
 - Only (II) above
 - Both (I) and (II) above
 - Both (II) and (III) above
 - All (I), (II) and (III) above.

32. Which of the following statements is/are **not true**?
- I. Operating breakeven point is that level of EBIT at which EPS is zero.
 - II. At operating breakeven point, EBIT is just sufficient to cover the financial charges.
 - III. Degree of operating leverage is equal to zero at the operating breakeven point.
- a. Only (I) above
 - b. Only (II) above
 - c. Both (II) and (III) above
 - d. Both (I) and (III) above
 - e. All (I), (II) and (III) above.
33. Which of the following statements is/are **true** regarding inventory turnover ratio?
- I. If the inventory turnover ratio has decreased from past, it means that either inventory is decreasing or cost of goods sold is increasing.
 - II. If a firm has an inventory turnover that is slower than for its industry, then the inventory stocks may be low.
 - III. Low inventory turnover has impact on the liquidity of the business.
- a. Only (I) above
 - b. Only (II) above
 - c. Only (III) above
 - d. Both (I) and (III) above
 - e. All (I), (II) and (III) above.
34. Which of the following is/are **true** regarding leverages?
- I. When the firm is operating at a level greater than the operating breakeven point, DOL decreases as the level of quantity produced and sold increases.
 - II. As fixed costs increases, financial breakeven point decreases.
 - III. Increase in debt financing increases the fluctuations in the return on equity.
- a. Only (I) above
 - b. Only (II) above
 - c. Only (III) above
 - d. Both (I) and (III) above
 - e. Both (II) and (III) above.
35. In arriving at funds from operations, which of the following will be deducted from net profit?
- a. Preliminary expenses written off
 - b. Transfer to reserves
 - c. Proposed dividends
 - d. Profit on sale of investments
 - e. Loss on sale of fixed assets.
36. Which of the following increases the external funds required?
- a. An increase in the spontaneous liabilities to sales ratio
 - b. A decrease in the retention ratio
 - c. An increase in the assets turnover ratio
 - d. A decrease in the short-term bank borrowings
 - e. Both (b) and (d) above.
37. Which of the following **cannot** be inferred from a funds flow analysis?
- a. Liquidity
 - b. Acquisition of non current assets
 - c. External funds utilized
 - d. Pattern of financing
 - e. None of the above.

38. Which of the following is/are **not** the assumption(s) to find out the growth rate that can be achieved without resorting to issue of external equity?
- a. Net profit margin remains constant
 - b. Debt-equity ratio remains constant
 - c. All the earnings are retained in the firm to finance the required growth
 - d. Assets of the firm will increase proportionately to sales
 - e. Both (b) and (d) above.
39. Which of the following is **not** a technique of financial projection?
- I. Proforma balance sheet.
 - II. Operating budget.
 - III. Projected income statement.
 - IV. Cash budget.
 - V. Projected statement of changes in Financial position.
- a. Only (I) above
 - b. Only (II) above
 - c. Both (III) and (IV) above
 - d. Only (V) above
 - e. None of the above.
40. Sustainable growth rate increases with a decrease in
- a. Payout ratio
 - b. Debt ratio
 - c. Profit margin ratio
 - d. Sales-assets ratio
 - e. None of the above.

END OF SECTION A

Section B : Problems (60 Points)

- This section consists of questions with serial number 41 - 75.
- Answer all questions.
- Points are indicated against each question.

41. Mr.Rajsinha is 70 years old and he is expecting that he will live for another ten years. His total savings are Rs.1,00,000, which he has deposited in a bank. He wants to spend his savings equally over these ten years. If the interest earned on these deposits is 10% per annum, the annual withdrawal made over the defined period such that the account balance becomes zero at the end of 10 years is

- a. Rs.38,550
- b. Rs.20,000
- c. Rs.18,550
- d. Rs.16,273
- e. Rs. 6,275.

(1 point)

42. Consider the following data regarding the bonds issued by Zeta Ltd. on July 15, 2001 to be redeemed on July 15, 2008:

Face value of the bond	Rs.100
Issued at a discount of	10%
Redeemable at a premium of	10%
Interest payable semi-annually	8% p.a.
Current market price as on July 15, 2003	Rs.95

The yield to maturity of the bond to a prospective investor is

- a. 9.27%
- b. 10.80%
- c. 12.24%
- d. 12.66%
- e. 13.55%.

(2 points)

43. Vijay Finance, is offering a pension scheme for people who are at the age of 40 years. According to the scheme the individuals who subscribe will have to deposit Rs.15,000 per year for 20 years. At the end of 20 years, every subscriber will receive a specific sum plus an annuity of Rs.75,000 for a period of 25 years. If the depositors wish to earn 11% rate of return, the minimum amount to be paid by Vijay finance at the end of 20 years is

- a. Rs. 1,18,007
- b. Rs. 3,31,395
- c. Rs. 6,31,650
- d. Rs. 9,63,045
- e. Rs.15,94,695.

(2 points)

44. A Ltd. and B Ltd. are two companies that manufacture computer hardware. The most recent dividend paid by these two companies is Rs.1.80 per share and the required rate of return for both the companies is 11%. The intrinsic value of the share of A Ltd. is Rs.34.12. The dividends of B Ltd. are expected to grow at a rate of 8% annually for 3 years, followed by "x%" annual growth rate from year 4 to infinity. The price of the security of A Ltd. is greater than the price of the share of company B by Rs. 7.60. The value of "x" is
- a. 1%
 - b. 2%
 - c. 3%
 - d. 4%
 - e. 5%.

(3 points)

45. The networth of M/s.Ashok Ltd. is Rs.10,00,000. The company has the policy of retaining 50% of its earnings. If the company earns 10% on its net worth the growth rate in dividends is
- a. 8%
 - b. 7%
 - c. 6%
 - d. 5%
 - e. 4%.

(1 point)

46. Asita borrowed an amount of Rs.41,000 from a bank to be repaid in five equal annual installments. If the rate of interest is 7% p.a. on the reducing balances, the amount of principal amortized in the first payment is
- a. Rs. 2,870
 - b. Rs. 7,130
 - c. Rs. 10,000
 - d. Rs. 12,345
 - e. Rs. 13,130.

(2 points)

47. Chandra Textiles presently pays a dividend of Rs.3 per share. The dividend is expected to grow at the rate of 4% for the next four years then at 3% for next three years, after that if it expected to grow at a rate of 1% forever. If the required rate is 10% the value one can pay now if the holding period is (a) infinite and (b) 3 years respectively is
- a. Rs.55.58, Rs.55.58
 - b. Rs.38.75, Rs.38.75
 - c. Rs.46.75, Rs.46.75
 - d. Rs.38.75, Rs.30.75
 - e. Rs.38.75, Rs.46.75.

(2 points)

48. Pacific Ltd. is a toy manufacturing company. The Degree of Operating Leverage and the Degree of Financial Leverage for the company are 1.1 and 1.5 respectively. The company has a debt of Rs. 6 crore on which interest is paid at 10% p.a. It has a preference capital of Rs. 4 crore on which preference dividend is payable at 10 % p.a. The variable cost to sales ratio is 40%. The tax rate applicable to the firm is 50%.

The sales revenue and the fixed costs of the firm are

- a. Rs. 7.7 crores and Rs. 40 lakhs
- b. Rs. 7.0 crores and Rs. 42 lakhs
- c. Rs. 7.7 crores and Rs. 42 lakhs
- d. Rs. 8.0 crores and Rs. 50 lakhs
- e. Rs. 9.6 crores and Rs. 40 lakhs.

(3 points)

49. Presently the current assets and current liabilities of BSN Ltd. are Rs.10 lakh and Rs.5 lakh respectively. In the current year fixed assets worth Rs.2 lakh were purchased, new shares are issued for Rs.5 lakh, bills receivable worth Rs.10,000 were dishonored and Rs.10,000 cash is collected from customers. The current ratio will

- a. Increase by 0.60
- b. Decrease by 0.60
- c. Increase by 0.25
- d. Increase by 0.75
- e. Have no change.

(1 point)

50. ABBA Ltd. has issued fully convertible debentures of face value Rs.100 each with a coupon rate of 10% p.a. The debentures will be converted into 2 equity shares at a price of Rs.50 each at the end of four years from the date of issue. After two years the share price decreased to Rs.40. The value of the convertible after two years from the date of issue at the required rate of return of 12% is

- a. Rs. 80.68
- b. Rs. 81.25
- c. Rs. 93.97
- d. Rs. 96.60
- e. Rs.111.62.

(1 point)

51. Consider the following data regarding the companies M/s. X Ltd. and M/s. Y Ltd.

Particulars	X Ltd.(Rs.)	Y Ltd.(Rs.)
Sales	32,00,000	30,00,000
Net profit after tax	1,23,000	1,58,000
Equity capital (Rs.10 share)	10,00,000	8,00,000
General reserves	2,32,000	6,42,000
Long-term debt	8,00,000	6,60,000
Creditors	3,82,000	5,49,000
Bank credit (short term)	60,000	2,00,000
Fixed assets	15,99,000	15,90,000
Inventories	3,31,000	8,09,000
Other current assets	5,44,000	4,52,000

The management of company X declared a dividend of 6% and company Y declared a dividend of 8% for the current year.

Which of the following statements is/are **false**?

- I. Asset utilization of company X is more than company Y.
 - II. Company Y retains larger proportion of its income in the business than Company X.
 - III. Company X is using the shareholders money more profitable than Company Y.
- a. Only (I) above
 - b. Only (II) above
 - c. Only (III) above
 - d. Both (I) and (II) above
 - e. All (I), (II) and (III) above.

(3 points)

52. The probability distributions of returns of Micorsun Ltd. and the market returns are given below:

Probability	0.40	0.25	0.15	0.20
Micorsun Ltd. (in %)	3	4	5	7
Market return (in %)	6	9	8	7

The covariance of market returns and returns from Micorsun Ltd. is $0.4625(\%)^2$. If the market return is zero, the return earned by Micorsun Ltd. will be

- a. 1.595%
- b. 1.900%
- c. 2.103%
- d. 5.695%
- e. 6.598%.

(2 points)

53. Consider the following:

Provision for contingencies	= Rs. 30,000
Loans and advances (given)	= Rs.20,00,000
Stipulated amount for provident fund	= Rs.10,00,000
Short-term investments	= Rs.30,00,000

The following changes have occurred during the year:

Increase in provision for contingencies	Rs. 20,000
Increase in the stipulated amount for provident fund	Rs.10,00,000
Loan and advances (taken)	Rs.10,00,000
Decrease in short-term investments	Rs.20,00,000

After considering the above changes, the new net working capital will be

- a. -Rs. 50,000
- b. Rs. 9,50,000
- c. Rs. 19,70,000
- d. Rs. 39,70,000
- e. Rs. 49,50,000.

(1 point)

54. Consider the following data regarding M/s. Amar Labs Ltd. for the year 2002-2003:

	Rs. lakhs
Retained earnings	20
Interest earned on investments	6
Amortization of copy rights written off	5
Depreciation	4
Dividends	10
Preliminary expenses written off	5

Funds from operations of M/s. Amar Labs Ltd. during the year was

- a. Rs.50 lakhs
- b. Rs.41 lakhs
- c. Rs.38 lakhs
- d. Rs.21 lakhs
- e. Rs.20 lakhs .

(1 point)

55. The debt-equity ratio of ABC Ltd. is 2 and its annual report indicates that the earnings per share and book value per share are Rs.5 and Rs.20 respectively. What is its return on equity?

- a. 5%
- b. 15%
- c. 20%
- d. 25%
- e. Data is insufficient.

(1 point)

56. Consider the following data regarding M/s. X Ltd.:

Operating profit	Rs.1,00,000
Profit after tax	Rs. 50,000
10% Preference shares	Rs.1,00,000
Degree of total leverage	4
Tax rate	20%

If EBIT has to increase by 10%, sales have to be increased by

- a. 10%
- b. 8%
- c. 5%
- d. 4%
- e. 2.5%.

(2 points)

57. Consider the following for the year 2002-03:

	Rs.
Sales	10,00,000
Gross profit margin	40%
Current Ratio	2.5
Total assets turnover ratio	2
Inventory turnover ratio	8
Fixed assets: Current assets	3:1

The quick ratio is

- a. 0.6
- b. 0.8
- c. 1.0
- d. 1.2
- e. 1.5.

(1 point)

58. Bank A pays interest at 10 percent p.a. compounded semi-annually. Bank B compounds interest on monthly basis. If Bank B wishes to pay the same effective rate of interest as that of A, the annual rate of interest it should quote is

- a. 9.80%
- b. 10.00%
- c. 10.25%
- d. 10.75%
- e. 11.00%.

(1 point)

59. Mr. Sharma wishes to purchase a 91 day T-bill of face value Rs.100, maturing after 60 days. If, on maturity, he wishes to earn a yield of 11.5%, the purchase price for Mr. Sharma should be

- a. Rs.88.50
- b. Rs.92.21
- c. Rs.97.22
- d. Rs.98.14
- e. Rs.99.03.

(1 point)

60. Mr.Jaswant has planned to purchase a flat, whose present cost is Rs.15 lakhs. He has approached City Home Finance, which has agreed to finance 80% of the cost of the flat. As he, presently, has Rs.1 lakh only which is not sufficient to purchase the flat, he deferred his plan of purchase for three years and deposited the amount he had in a bank. Mr. Jaswant planned to save annually for the next three years and purchase the flat with the bank finance of 80%, at the end of three years. The rate of interest that can be earned on the bank deposits is 8% p.a. and the cost of the flat is expected to escalate by 5% p.a. The amount that Mr.Jaswant has to save annually, the first deposit being made today, is
- Rs.0.630 lakhs
 - Rs.0.795 lakhs
 - Rs.0.859 lakhs
 - Rs.1.248 lakhs
 - Rs.1.348 lakhs.

(3 points)

61. If the current assets and current liabilities are Rs.1,200 lakhs and Rs.1,500 lakhs respectively, then the amount of short-term borrowings that have to be repaid to increase the current ratio to 1.2 is
- Rs. 50 lakhs
 - Rs. 60 lakhs
 - Rs.250 lakhs
 - Rs.300 lakhs
 - Rs.500 lakhs.

(1 point)

62. Consider the following data:

Risk-free rate of return	6% p.a.
Market risk premium	8% p.a.
Beta of stock X	1.15

If the risk free rate of return increases to 8% p.a. and the slope of the SML remains constant, the existing and the new required rate of return will be

- 8.3%; 10.3%
- 8.3%; 8.0%
- 15.2%; 19.5%
- 15.2%; 17.2%
- 10.2%; 12.2%.

(1 point)

63. Consider the following information regarding the bond issued by XL Pharma Ltd:

Face value of the bond	Rs.1,000
Coupon per annum	10%
Issued at a discount of	10%

If the current yield of the bond is 8.33%, the bond is trading at a

- Discount of 12%
- Discount of 16.67%
- Premium of 20%
- Premium of 16.67%
- Premium of 30%.

(1 point)

64. The probability distribution of the rates of return on the shares Alpha and Beta are as follows:

Probability (%)	Returns (%)	
	Share Alpha	Share Beta
10	-10	-3
20	15	18
40	28	32
20	12	16
10	5	8

A portfolio consisting of 40 percent of Alpha and 60 percent of Beta is formed.

The expected rate of return and the standard deviation of returns on the portfolio is respectively

- 18.5%; 11.6%
- 18.5%; 29.8%
- 14.8%; 11.6%
- 19.7%; 11.6%
- 14.8%; 29.8%.

(2 points)

65. The data on the current assets and current liabilities of Fitmark Ltd. for the financial year 2002-03 are given below:

(Rs. in lakh)				
	Debtors	Cash balance	Inventory	Spontaneous liabilities
Beginning	80	50	10	40
Closing	100	60	25	35

Apart from the above, the company for the first time borrowed short-term bank borrowings of Rs.10 lakhs and long-term secured loan of Rs.30 lakhs. The change in net working capital is

- Rs.10 lakhs
- Rs.15 lakhs
- Rs.20 lakhs
- Rs.40 lakhs
- Rs.50 lakhs.

(1 point)

66. The expected rate of return on the market is 15 percent and the risk-free rate of return is 6 percent. If the beta of stock A is 1.75 and that of stock B is 0.85, the excess return required on the riskier stock than on the less risky stock is

- 5.40%
- 8.10%
- 10.20%
- 13.50%
- 15.75%.

(1 point)

67. If the dividend payout ratio is 0.40 and capitalization rate is 12.5 percent, then the dividend yield is

- 4%
- 5%
- 6%
- 7%
- 8%.

(1 point)

68. India Investment Fund holds the following portfolio:

Stock	Investment (Rs.crores)	Beta
A	200	0.5
B	200	2
C	100	4

The required rate of return on the market is 14% and that of the above portfolio according to CAPM is 20.4%

The fund manager has proposed to sell C for Rs.100 crores and use the proceeds to purchase stock D which has a beta of 3. The required rate of return of the new portfolio according to CAPM is

- a. 12.8%
- b. 18.1%
- c. 18.8%
- d. 20.2%
- e. 21.3%.

(3 points)

69. As per the Rule of 69, if the amount deposited today doubles in four years and seven months, the effective interest rate per annum is

- a. 15.1 percent
- b. 15.5 percent
- c. 15.8 percent
- d. 16.0 percent
- e. 16.3 percent.

(1 point)

70. Penguin India Limited has issued 10 year bonds of face value of Rs.1000 on May 1, 2000. The bonds carry a coupon of 10% p.a. payable semi-annually on October 31 and April 30 of every year. Mr.Anand wants to purchase the bond on July 1, 2003. If the market rate of return is 12 percent p.a., Mr.Anand has to purchase the bond (without considering the accrued interest) at

- a. Rs. 870
- b. Rs. 930
- c. Rs. 980
- d. Rs.1000
- e. Rs.1010.

(2 points)

71. Consider the following data:

	Rs. lakhs
Closing balance of accounts receivables	25
Operating balance of accounts receivables	15
Average collection period (days)	25
Credit sales are 80% of sales	

Assuming 365 days in year, the total sales amount to

- a. Rs.234 lakhs
- b. Rs.243 lakhs
- c. Rs.292 lakhs
- d. Rs.365 lakhs
- e. Rs.456 lakhs.

(1 point)

72. Ms.Smitha is considering investing in the equity shares of Good Smile Tooth Paste Limited. She gathers the following information on the equity shares of the company:

Return on the stock when the market return is zero	4%
Rate of return on the market	12%
Beta of the shares	0.9
Expected Earnings per share next year	Rs.3
Pay-out ratio	60%
Current market price of the share	Rs.40

Ms.Smitha expects the earnings of the company to grow at a constant rate and the pay-out ratio to remain constant.

If the equity share is in market equilibrium according to the Single-index model, the expected price of the share at the end of five years will be

- a. Rs.72
- b. Rs.65
- c. Rs.58
- d. Rs.45
- e. Rs.35.

(3 points)

73. A bond, which is currently selling for Rs.1200 is yielding a rate of return of 15% p.a. The face value of the bond is Rs.1000 and maturity period is 5 years. If the coupons are paid annually, the current yield on the bond is

- a. 12.5%
- b. 15.0%
- c. 17.5%
- d. 18.0%
- e. 21.0%.

(2 points)

74. Consider the following data regarding M/s. M&C Ltd.

Assets turnover ratio	1.111
Return on total assets	16%
Equity multiplier	3.75
Dividend	37.5%
Equity capital	Rs.12 lakhs
Face value per share	Rs.6

The internal growth rate that the company can achieve without resorting to external equity is

- a. 15%
- b. 18%
- c. 25%
- d. 29%
- e. 33%.

(3 points)

75. The income statement of National Tyre Company Ltd. is given below:

	(Rs. in crores)
Net sales	2070
Cost of goods sold	1100
Selling expenses	550
Administrative expenses	65
Interest	75
Taxes	84
Net profit	196

25% of the cost of goods sold and 20% of the selling expenses are fixed costs.

Administrative expenses are entirely fixed in nature. The paid up equity share capital of the company consists of 100 lakh equity shares of Rs.10 each. Further, the company has employed preference share capital which has a book value of Rs.150 crores and the dividend rate on the same is 12%. It is expected that there will be no change in its capital structure in the near future.

If the company plans to increase its EPS by 25%, the percentage increase in sales will be

- a. 7.9%
- b. 11.0%
- c. 15.4%
- d. 14.0%
- e. 17.9%.

(3 points)

END OF SECTION B

Suggested Answers

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Section A : Basic Concepts

1. Answer : (d)

Reason : In the call money market day-to-day surplus funds of banks are traded. The call loans are of very short term in nature and any amount of money can be lent or borrowed at a convenient interest rate, which is acceptable to both the lender and the borrower and there is no maximum ceiling on the interest rate. Hence, in the given case, though the amount is huge, the interest is decided by the lender and the borrower and RBI has no role in the interest determination. The correct answer is (d).

2. Answer : (a)

Reason : Compounding more than once during a year increases the effective rate of interest. Thus, the effective rate of interest in case of compounding more than once during a year is more than the nominal rate of interest. As the frequency in the compounding increases the effective rate of interest increases. In the given case, Mr. Anand is interested in borrowing funds. He should choose that option which gives him the lowest interest rate. Hence, he should choose Scheme A as the compounding is done only once. So the answer is (a).

3. Answer : (e)

Reason : Commercial papers are short-term, unsecured promissory notes issued at a discount to face value by well-known companies that are financially strong and carry a high credit rating. As per the guidelines, any company wishing to raise money through CP has to fulfill the following requirements:

- i. The tangible net worth of issuing company should not be less than Rs.4 crores.
- ii. The fund based working capital limit should not be less than Rs.4 crores
- iii. The company should obtain the second highest credit rating from one of the approved credit rating agencies.
- iv. Board resolution authorizing the issue is required.

Of the above, in the given case, the company has not met (ii) and (iii). Hence, it cannot issue commercial paper of any amount. Hence, (a), (b) and (c) are not correct. (d) is also not correct because the condition (ii) will be met but the condition (iii) will not be met. Hence, the answer is (e).

4. Answer : (d)

Reason : Expected nominal rate of interest is equal to Real rate of interest + expected rate of inflation + risk premium. If expected rate of inflation and risk premium are zero, expected nominal rate of interest is equal to real rate of interest. Hence, statement II is true. In the above equation if expected rate of interest is equal to risk premium, expected nominal rate of interest exceeds the real rate of interest by twice the risk premium. Hence, III is also true and the answer is (d).

If expected rate of inflation and risk premium are more than zero, expected nominal rate of interest will be more than the real rate of interest. Hence, I is incorrect.

5. Answer : (b)

Reason : In a bought-out deal, a company initially places its equity shares which are to be offered to the public at a later stage, to a sponsor or a merchant banker who in turn offloads the shares at the appropriate time. As given in the question when the market is low, the company cannot expect to get a good price for its issue or the issue may not be fully subscribed. So in order to get the right price, it can make a BOD to a merchant banker at the appropriate price who in turn may offload the shares to the public when the market picks up at a higher price and earn profit. Hence, the answer is (b).

When the market is low, the IPO may not fetch the right price or the right amount for the company. Hence, (a) is not correct. Private Placement, which is a direct sale by the company to a limited number of sophisticated investors will also not be successful as the investors may not give the right price to the company or may not be interested to invest during the ebb of the

economy. Hence, (c) is also not the answer. Rights issue, the method of raising additional funds from the existing members by offering shares to them on pro-rata basis, will also not be successful because the existing shareholders will not be interested to invest during the downturn of the economy. Hence, (d) and (e) are also not the answers.

6. Answer : (b)

Reason : Capital recovery factor is the inverse of the PVIFA factor. It can be applied to find out the amount that can be withdrawn periodically for a certain length of time, if a given amount is invested today. Hence I is not true and III is true and the answer is (b).

The factor that represents the amount that has to be invested at the end of every year for a period of n years at the rate of interest k in order to accumulate Re.1 at the end of the period is the sinking fund factor. Hence, II is incorrect.

7. Answer : (a)

Reason : If the delivery take place on second business day after the agreement on transaction takes place it is called 'spot market'. If the delivery date is next working day it is called 'TOM market'. If the agreement to buy & sell is agreed upon and executed on same day it is called Ready market (transaction) or cash transaction. Hence the answer is (a).

8. Answer : (c)

Reason : Risk arising due to the uncertainty of the time element in buying and selling securities without significant price concession is referred to as liquidity risk. Hence, (c) is the answer.

Market risk refers to the variability of returns due to the fluctuations in the securities market. Risk of reduction of purchasing power of the securities is referred to as inflation risk or purchasing power risk.

9. Answer : (c)

Reason : Call option is a contract that confers the right, but not an obligation to the holder to buy an underlying asset at a price agreed on a specific date or by a specific expiry date. In the given case, the investor is interested to hedge his forex payments and have a minimum risk position. Hence, it is better for him to enter into a call option to purchase the required forex at an agreed price on the expected future date. Thus if the exchange rate behaves against the expectation the investor shall not exercise his right and the loss that will be incurred will be only the premium paid by him to the writer of the option. Hence, the answer is (c).

Though payment can be hedged through purchasing the forex futures or entering into a forward contract to purchase, there is no downside limit to the loss that can be incurred.

10. Answer : (c)

Reason : Standard deviation, a measure of dispersion around the expected (or average), is the square root of the variance of the rates of return. If the variance is higher, the standard deviation will also be higher. Hence, III is true and the answer is (c).

Range is referred as the difference between the highest and lowest values. Standard deviation may be the highest, irrespective of the range being the lowest or highest. Hence, I is not true. Highest mean does not mean that it should have highest standard deviation. Hence, II is also not true.

11. Answer : (d)

Reason : Limit order is a type of order where it is limited by fixed price which may or may not include brokerage. Hence, (d) is the answer. Limited discretionary order is to provide discretion to the broker to execute order at price which almost is the approximate price fixed by the client. Best rate order is to execute the buy/sell order at the best possible price. In Immediate order order get canceled if not executed immediately at the quoted price. In Stop loss order, a particular limit is given for sustenance of loss to the broker.

12. Answer : (d)

Reason : The amount of risk reduction achieved by diversification depends on degree of correlation between the stocks under consideration and the number of stocks involved in the portfolio. The other two factors given do not have role in the risk reduction. Hence, the answer is (d).

13. Answer : (c)

Reason : According to CAPM, the required rate of return of a stock is equal to risk-free rate of return + Beta (Market rate of return – Risk free rate of return), where market rate of return – Risk free rate of return is the market risk premium. In general, if all the investors become more risk averse i.e. if their risk taking ability has reduced, then the market risk premium and in turn the risk premium of the stock will increase. With increase in the market risk premium the required rate of return on all the stocks will also increase and statement (I) and (II) are correct.

Slope of the SML is given by $R_m - R_f$. Thus when $R_m - R_f$ increases the slope will increase and hence statement (III) is not correct and the answer is (c).

14. Answer : (b)

Reason : According to the single-index model, the required rate of return on stock is equal to alpha + beta (Market return). If beta is equal to one, one required rate of return will be equal to alpha + market return and if the alpha intercept is more than one, then the required rate of return will be more than the market return. Hence (b) is true.

According to the CAPM approach, required rate of return is equal to risk free rate of return + beta(market return – risk free rate of return). If beta is equal to one, required rate of return will be equal to market return. Hence, (a) is not correct.

According to CAPM, a stock is said to be correctly priced if expected rate of return is equal to required rate of return. Hence, (c) is not correct.

Beta is equal to one implies that if market return increases by 10%, the return on the stock varies by 10%. Hence, (d) is also incorrect.

A defensive stock has a beta of less than one. Hence, (e) is also not correct.

15. Answer : (a)

Reason : The most important risk to an investor who is well-diversified in common stocks is the market risk i.e. the non-diversifiable risk. Hence, the answer is (a).

Total risk comprises of diversifiable and non-diversifiable risks. Due to diversification, all the diversifiable risks are reduced and the only risk that prevails is the non-diversifiable risk. Hence, (b) is not the answer. Financial risk, business risk and the liquidity risks are the diversifiable risks which are reduced or eliminated due to diversification and hence are not important to a well diversified investor. Hence, (c), (d) and (e) are not the answers.

16. Answer : (d)

Reason : Going Concern Value is the amount that a company could realize if it sold its business as an operating one. Its value would always be higher than the liquidation value, the difference accounting for the usefulness of assets and value of intangibles. Hence, (d) is true.

Replacement Value is the amount that a company would be required to spend if it were to replace its existing assets in the current condition. Liquidation Value is the amount that a company could realize if it sold its assets after having terminated its business. It is generally a minimum value which a company might accept if it sells its business. Market Value of an asset or security is the current price at which the asset or the security is being sold or bought in the market. Book value is an accounting concept and it is not the same as the going concern value.

17. Answer : (d)

Reason : According to CAPM a security's required rate of return is given as risk free rate of return + Beta (Excess of market return over risk-free rate of return). The excess of market return over risk free rate is referred to as market risk premium and the product of the risk premium and beta of the security is referred to as the risk premium based on the market risk or the systematic or non-diversifiable risk. Hence, (d) is the answer and the others are incorrect.

18. Answer : (d)

Reason : The conversion value represents the market value of the convertible if it were converted into stock. This is the minimum value of the convertible based on the current price of the issuer's stock. Hence, I is true. Conversion premium is the difference between the conversion price and the conversion value. Hence, III is also true and the answer is (d).

Whether it is optionally convertible debenture or compulsorily convertible debenture, whether it is fully convertible or partially convertible debenture, on conversion cash is not involved. It is merely, the old security is traded and appropriate number of new securities is issued in turn.

Hence, II is incorrect.

19. Answer : (c)

Reason : Beta of a market portfolio is always equal to one or unity and the beta of the risk-free security is always zero. Hence, the answer is (c).

20. Answer : (d)

Reason : Dividend yield is expressed as dividend divided by market price of the security. It is also calculated as the dividend pay-out ratio divided by the P/E ratio. High dividend yield does not indicate anything about the profitability or liquidity of the company. Hence, if the profitability and liquidity are low, investment should not be based only the dividend yield. Hence, I and III are not true and the answer is (d).

21. Answer : (e)

Reason : According to the bond value theorems, when the required rate of return is more than the coupon rate, the value of the bond will be less than the face value i.e. it will be trading at a discount. As time passes the discount on the bond declines and the value of the bond reaches the par value on the maturity i.e. as time passes the value of the bond increases and on the maturity it will be equal to the par value. Hence, statements (II) and (III) are true and (I) is not correct and the answer is (e).

22. Answer : (c)

Reason : All the given ratios except the return on equity measure the long term solvency of the organization.

23. Answer : (e)

Reason : A warrant is a call option to buy a stated number of shares. It gives the holder the right to subscribe to the equity shares of the company. When a warrant is issued, the exercise price is always greater than the current market price. This price may be fixed for entire life of warrant or increased periodically. The existence of positive premium on a warrant means that it will be more beneficial for the warrant holder to sell his warrant, thus realizing the theoretical value plus premium when he exercises it. The premium associated will shrink as the expiry date approaches. The actual value of the warrant will be equal to the theoretical value on the expiry date. Higher the volatility of the underlying stock, larger the premium fixed. Hence, statements (I) and (III) are true and (II) is untrue.

24. Answer : (e)

Reason : Earnings power is not affected by tax and leverage. Hence, (a), (b) and (c) are not correct. Greater the total assets, lower the earning power. Hence, (d) is also not correct. Sales and pre-tax earnings being the same, earning power would be higher if the total assets turnover ratio is higher. Hence, the answer is (e).

25. Answer : (b)

Reason : According to the bond value theorems, as the YTM increases the price of the security decreases. However, the long-term bonds changes more than the short term bonds. Hence, (II) is true.

When long-term maturity bonds have higher interest rates than the short maturity bonds, the bond yield curves will be upward sloping curve. Hence, (I) is untrue.

High coupon rate bonds are more vulnerable to changes in the interest rates than the small coupon rate bonds. Hence, (III) is also untrue and the answer is (b).

26. Answer : (b)

Reason : Du Pont equation for return on equity is:

Return on Equity (ROE)

$$\frac{\text{Net profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Average assets}} \times \frac{\text{Average assets}}{\text{Average equity}}$$

The third component of the equation is called equity multiplier.

Thus, higher the assets turnover ratio, higher the equity multiplier, higher the debt-assets ratio,

higher the return on assets, higher will be the return on equity. Hence, (c), (d) and (e) are not correct and (b) is correct. Return on equity does not depend on sales. Hence, (a) is also not true.

27. Answer : (c)

Reason : According to the bond value theorems, price of the security and the yield to maturity are inversely related. As YTM increases, other things remaining constant, the value of the bond decreases. Hence, in the given question the value of bond B will be greater than the value of bond A which is greater than the value of bond C. Hence, the answer is (c).

28. Answer : (d)

Reason : An increase in current assets or a decrease in current liabilities will increase the working capital. Hence, a decrease in the amount of provision for tax i.e. a current liability results in an increase in working capital. Option (a) results in an increase in current liability and hence results in decrease in working capital. Other alternatives indicates changes in non-current assets and hence are not correct.

29. Answer : (e)

Reason : Trade creditors use the financial analysis to know the liquidity position of the firm. Long-term creditors use the financial statement analysis to know the long-term solvency of the firm. Investors use the financial statement analysis to know the earning capacity of the firm. Hence, all the given statements are true and the answer is (e)

30. Answer : (c)

Reason : Increase in long term liability, issue of capital and decrease in long term assets result in the sources of working capital. Accordingly, (c) is a source of working capital.

Raising funds through CP and discounting receivables changes both the current assets and current liabilities. Hence not a source of working capital. Issue of bonus shares is a mere accounting treatment and redemption of preference of shares is a use of working capital.

31. Answer : (c)

Reason : Current ratio and the quick ratio are the two ratios to measure the liquidity directly. To measure liquidity indirectly, ratios like accounts receivable turnover ratio and inventory turnover ratios are employed. Hence, statement I is true.

Current assets consists of accounts receivable, inventory and cash. The most liquid form of current assets is cash and the next is the accounts receivable. These two are referred to as quick assets. Hence, even though the current ratio of two companies are same, the one with more component of accounts receivable than inventory is said to be more liquid than the other one. Hence, statement II is also true.

The main drawback of the current ratio is that it does not predict the future fund flows it only states the liquidity position of the company. Hence, III is not true and the answer is (c).

32. Answer : (e)

Reason : Operating breakeven point is that level of sales at which EBIT is zero and degree of operating leverage at the operating breakeven point is infinite. Hence, I, II and III are not correct and the answer is (e).

33. Answer : (c)

Reason : $\text{Inventory turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Average inventory}}$

If the inventory turnover ratio has decreased from past, it means that either inventory is growing or cost of goods sold sales are dropping. So statement (I) is incorrect.

If a firm has an inventory turnover that is slower than for its industry, then there may be obsolete goods on hand, or inventory stocks may be high. So statement (II) is incorrect.

Low inventory turnover has impact on the liquidity of the business because most of the current assets are tied up in inventory. So statement (III) is correct.

Hence option (c) is the answer.

34. Answer : (d)

Reason : When the firm is operating at a level greater than the operating breakeven point, DOL decreases as the level of quantity produced and sold increases. Hence, I is true. Increase in debt financing, increases the interest payments and reduces the earnings left to the equity

shareholders and thus increases the fluctuations in the return on equity. Hence, III is also true and the answer is (d)

Financial breakeven point is equal to interest + preference dividend adjusted for tax. Hence, fixed costs does not come into picture and II is incorrect.

35. Answer : (d)

Reason : Profit on sale of investments was added to arrive at the net profit figure. So the same has to be deducted in arriving at the funds from operations. Hence, the answer is (d).

In arriving at the net profit, preliminary expenses written off, transfer to reserve, loss on sale of fixed assets, proposed dividends have been deducted. Hence, to arrive at the funds from operations all the above have to be added. Hence, (a),(b), (c) and (e) are not the answers.

36. Answer : (b)

Reason : A decrease in the retention ratio implies an increase in the dividend payment and less amount of funds available for investment and hence increases the external funds required. Hence, (b) is true. An increase in the spontaneous liabilities to sales ratio, an increase in assets turnover ratio (i.e. a decrease in total assets to sales ratio) decreases the external funds required. Hence, (a) and (c) are incorrect. Short-term bank borrowings are one of the sources of the external funds and does not indicate the amount of funds required.

37. Answer : (e)

Reason : Using a funds flow statement we can know about all the given factors. i.e. liquidity, acquisition of non current assets, about utilization of external funds and pattern of financing. Hence (e) is the answer.

38. Answer : (c)

Reason : The model does not assume that all the earnings are retained in the firm to finance the required growth. It only assumes that dividend payout ratio is constant. other alternatives are the assumptions.

39. Answer : (e)

Reason : All the given techniques are used to forecast financial statements. Hence, (e) is the answer.

40. Answer : (a)

Reason : A decrease in the pay-out ratio increases the sustainable growth rate. Hence the answer is (a).

Section B : Problems

41. Answer : (d)

Reason : Equated annual withdrawal $\times$ PVIFA(10,10%) = Rs.1,00,000

$$\text{CIF} \times 6.145 = 1,00,000$$

$$\text{CIF} = 1,00,000/6.145 = \text{Rs.}16,273.393$$

42. Answer : (b)

Reason : The YTM is the value of 'i' in the following:

$$95 = 4\text{PVIFA}_{i,10} + 110\text{PVIF}_{i,10}$$

$$\text{At } i = 5\%, \text{ RHS} = 98.428$$

$$\text{At } i = 6\%, \text{ RHS} = 90.82$$

$$i = 5 + \frac{98.428 - 95}{98.428 - 90.82}$$

$$= 5.4$$

$$= 10.8\% \text{ (approximately)}$$

Hence, the answer is (b).

43. Answer : (b)

Reason : According to the given information subscribers will deposit Rs.15000 for 20 years and after 20 years scheme will pay Rs.75,000 at the end of every year for 25 years plus Rs.x at the end of 20 years from now.

The discount rate is 11%.

Therefore the data can be fit into a equation as

$$15,000 \times \text{FVIFA}(11\%,20) = X + 75,000 \text{ PVIFA}(11\%,25)$$

$$15,000 \times 64.203 = X + 75,000(8.422)$$

$$963045 = X + 631650$$

$$X = \text{The amount which will be returned} = \text{Rs. } 331395$$

44. Answer : (c)

Reason : IV of A Ltd. = Rs.34.12

$$\text{Price of B Ltd.} = 34.12 - 7.60 = \text{Rs.}26.52$$

Price = PV of dividends + PV of IV

$$= \frac{1.8(1.08)}{1.11} + \frac{1.8(1.08)^2}{(1.11)^2} + \frac{1.8(1.08)^3}{(1.11)^3} + \frac{1.8(1.08)^3(1+x)}{(k-g)(1.11)^3} = 26.52$$

$$= 1.751 + 1.704 + 1.658 + \frac{1.658(1+x)}{0.11-x} = 26.52$$

$$\frac{1.658(1+x)}{0.11-x} = 21.407$$

$$1.658 + 1.658x = 2.355 - 21.407x$$

$$23.065x = 0.6968$$

$$x = 0.03$$

Hence $x = 3\%$ and answer is (c).

45. Answer : (d)

Reason : Let net worth = Rs.10,00,000

Year 1

$$\text{Total earnings (10\% of Rs.10, 00, 000)} = \text{Rs.}1,00,000$$

$$\text{Less: Retained earnings (50\%)} = \underline{\text{Rs. } 50,000}$$

$$\text{Dividends distributed} = \underline{\underline{\text{Rs. } 50,000}}$$

Year 2

Earnings on net worth = Rs.1, 05, 000

(Rs.1,00, 000 + 10 % of Rs.50, 000)

Less: Retained earnings (50%) = Rs.52, 500

Dividends distributed = Rs.52, 500

Growth in dividends = $(\text{Dividends in 2}^{\text{nd}} \text{ year} - \text{Dividends in 1}^{\text{st}} \text{ year} / \text{Dividends in 1}^{\text{st}} \text{ year}) \times 100$

$= (\text{Rs.52, 500} - \text{Rs.50, 000}) / \text{Rs.50, 000}$

$= \text{Rs.2, 500} / \text{Rs. 50, 000}$

$= 5\%$

Hence option (d) is the answer.

46. Answer : (b)

Reason : Let the equal annual installment be A.

$41,000 = A \times \text{PVIFA}_{(7\%,5)}$

Therefore $A = \frac{41,000}{4.100} = \text{Rs.10,000}$.

Every installment comprises an interest component and a principal component.

The interest component in the first installment of Rs. 10,000 = $0.07 \times 41,000 = \text{Rs. 2,870}$.

Hence the amount of principal amortized by the first installment = $10,000 - 2,870 = \text{Rs. 7,130}$.

Hence, option (b) is the correct choice.

47. Answer : (b)

Reason :

(Amount in Rs.)

End of year	Dividend	Present value of dividends at 10 %
1	$3(1.04)$	$3.12 \times 0.909 = 2.84$
2	$3(1.04)^2$	$3.24 \times 0.826 = 2.68$
3	$3(1.04)^3$	$3.37 \times 0.751 = 2.53$
4	$3(1.04)^4$	$3.50 \times 0.683 = 2.39$
5	$3.50(1.03)$	$3.605 \times 0.621 = 2.24$
6	$3.50(1.03)^2$	$3.713 \times 0.564 = 2.09$
7	$3.50(1.03)^3$	$3.824 \times 0.513 = 1.96$
		16.73

Year 8 dividend = Rs.3.824 (1.01)

= Rs.3.862

Therefore Market price at the end of year seven

$= \frac{3.862}{0.1 - 0.01} = \text{Rs.42.51}$

Present value of Rs.42.91 at 10% discount rate

$\text{Rs.42.51} \times 0.513 = \text{Rs.21.81}$

Intrinsic value if the holding period is infinite = Rs.21.81 + Rs.16.73

= Rs.38.54

Market value at the end of year 3

$\frac{3.5}{1.1} + \frac{3.605}{(1.1)^2} + \frac{3.713}{(1.1)^3} + \frac{3.824 + 42.51}{(1.1)^4}$

$3.182 + 2.978 + 2.788 + 31.646 = \text{Rs.40.594}$

$$PV \text{ of MP} = 40.594 \times 0.751 = \text{Rs.}30.49$$

$$PV \text{ of dividends to be received at the end of year 1, 2 and 3 is Rs.}(2.84 + 2.68 + 2.53) = \text{Rs.}8.05$$

$$\text{Total value} = 30.49 + 8.05 = \text{Rs.}38.54$$

48. Answer : (c)

Reason : Let S represent Sales

V represent variable costs
and F represent fixed costs.

$$\text{Degree of Operating Leverage} = \frac{\text{Sales} - \text{Variable Costs}}{(\text{Sales} - \text{Variable Costs}) - \text{Fixed Costs}} = 1.1$$

$$\text{i.e. } \frac{S - 0.4S}{(S - 0.4S) - F} = 1.1$$

$$\text{i.e. } 0.6S = 0.66S - 1.1F$$

$$\text{i.e. } 0.06S - 1.1F = 0. \text{ ----- (Equation 1)}$$

Degree of Financial Leverage =

$$\frac{(\text{Sales} - \text{Variable Costs}) - \text{Fixed Costs}}{(\text{Sales} - \text{Variable Costs}) - \text{Fixed Costs} - \text{Interest payment} - \frac{\text{Preference dividend}}{1 - \text{tax rate}}} = 1.5.$$

$$\text{i.e. } \frac{(S - 0.4S) - F}{(S - 0.4S) - F - 60,00,000 - \frac{40,00,000}{1 - 0.50}} = 1.5$$

$$\frac{0.6S - F}{0.6S - F - 60,00,000 - 80,00,000} = 1.5$$

$$\text{i.e. } 0.6S - F = 0.9S - 1.5F - 210,00,000$$

$$\text{i.e. } 0.3S - 0.5F = 210,00,000. \text{ ----- (Equation 2)}$$

Multiplying equation 1 by 0.3 and multiplying equation 2 by 0.06, and solving the resultant equations, we get

$$0.018S - 0.33F = 0$$

$$0.018S - 0.03F = 12,60,000.$$

$$\text{-----}$$

$$-0.30F = -12,60,000$$

$$\text{i.e. } F = \text{Rs. } 42,00,000.$$

$$\text{Putting the value of F in equation 1, we get } S = \frac{1.1 \times 42,00,000}{0.06} = \text{Rs. } 770,00,000.$$

Hence the sales revenue for the firm is Rs.7,70,00,000 and the fixed costs are Rs.42,00,000.

49. Answer : (a)

Reason : Present current ratio = Rs.10lakh/Rs.5lakh = 2.

Fixed assets purchases of Rs.2 lakh will decrease the current assets to Rs.8lakh. Issue of new shares for Rs.5lakh will increase cash at bank, and the current assets to Rs.13lakh. Bills receivables dishonored will increase debtors (one form of current assets) and decrease bills receivables. As a result there will be no change in the amount of current assets. Cash worth Rs.10,000 collection from customers will increase one constituent of current assets, and i.e. debtors (decrease another constituent of current assets) and, hence, will have no change.

So the new current ratio = Rs.13lakh/Rs.5lakh = 2.60

50. Answer : (a)

Reason : Value of the convertible = PV of cash inflow

$$= \frac{10}{1.12} + \frac{10 + 40 \times 2}{(1.12)^2}$$

$$= 8.929 + 71.747 = \text{Rs.}80.68$$

51. Answer : (c)

Reason : Efficiency in the utilization of assets is measured by asset turnover ratio.

Asset turnover ratio = sales/total assets

Asset turnover ratio (company X)=Rs.32, 00, 000/Rs.24, 74, 000 = 1.29 times

Asset turnover ratio (company Y)=Rs.30, 00, 000/Rs.28, 51, 000 = 1.05 times

So asset utilization of company X is greater than company Y.

Hence statement (I) is correct.

Payout ratio determines the amount that is paid-out by the company and (1- paid-out) gives the amount retained

(Amount in Rs.)		
	X	Y
Dividends declared	$0.06 \times 10 \times 1,00,000$ = Rs.60,000	$0.08 \times 10 \times 80,000$ = Rs.64,000
Net profit	Rs.1,23,000	Rs.1,58,000
Retained earnings	Rs.63,000	Rs.94,000
R E as % of N P	51.2%	59.5%

Hence company Y retains larger proportion of its income & statement II is also true.

Utilization of shareholders money is determined by return on net worth.

(Amount in Rs.)		
	X	Y
Net worth	12,32,000	14,42,000
Net profit	1,23,000	1,58,000
R O N W	9.98%	10.96%

Hence, company Y utilizes shareholders funds more profitably than company X.

Hence, statement III is not true and the answer is (c).

52. Answer : (c)

Reason : $\bar{k}_a = 0.40 \times 3 + 0.25 \times 4 + 0.15 \times 5 + 0.20 \times 7 = 4.35\%$.

$$\bar{k}_m = 0.40 \times 6 + 0.25 \times 9 + 0.15 \times 8 + 0.20 \times 7 = 7.25\%.$$

$$\beta = \frac{\text{COV}_{sm}}{\sigma_m^2}$$

$$\begin{aligned}\sigma_m^2 &= (6 - 7.25)^2 0.4 + (9 - 7.25)^2 0.25 + (8 - 7.25)^2 0.15 + (7 - 7.25)^2 0.2 \\ &= 0.625 + 0.766 + 0.084 + 0.0125 \\ &= 1.4875\end{aligned}$$

$$\beta = \frac{0.4625}{1.4875} = 0.31$$

The alpha factor helps us in computing the rate of return that the security will earn when market return is zero.

$$\hat{\alpha} = \bar{k}_A - \hat{\alpha}_A \bar{k}_m = 4.35\% - (0.31) 7.25\% = 2.1025\%.$$

Hence, the security will earn a return of 2.1025% when the market return is zero.

53. Answer : (a)

Reason : Change in WC = (current assets + increase in current assets) – (current liabilities + increase in current liabilities)

Increased provision for contingencies (CL) = 30,000 + 20,000 = Rs.50,000

Loans and advances (given)(CA) = 20,00,000

Stipulation for provident fund(CL) = 10,00,000 + 10,00,000 = Rs.20,00,000

Short-term investments(CA) = 30,00,000 – 20,00,000 = Rs.10,00,000

New loans and advances taken (CL) = Rs.10,00,000

$$\begin{aligned}\text{New net WC} &= 20,00,000 + 10,00,000 - 50,000 - 20,00,000 - 10,00,000 \\ &= -\text{Rs.50,000}.\end{aligned}$$

54. Answer : (c)

Reason : Funds from operations = Retained earnings – interest earned + amortization + depreciation + dividends + P/E W. off

$$= 20 - 6 + 5 + 4 + 10 + 5 = \text{Rs.38 lakhs}$$

55. Answer : (d)

Reason : Return on equity = $\frac{\text{Profit after tax}}{\text{Net worth}}$

$$\text{EPS} = \frac{\text{Profit after tax}}{\text{No. of shares}}$$

$$\text{Book value} = \frac{\text{NW}}{\text{No. of shares}}$$

$$\text{Hence, ROE} = \frac{\text{EPS}}{\text{BV}} = \frac{5}{20} = 25\%$$

Hence, the answer is (d).

56. Answer : (c)

Reason : Change in EBIT with respect to change in sales is known by Degree of operating leverage.

$$\text{Degree of operating leverage} = \frac{\text{Degree of Total leverage}}{\text{Degree of Financial leverage}}$$

$$\text{DFL} = \frac{\text{EBIT}}{\text{EBIT} - \text{I} - \frac{\text{D}_p}{1 - T}}$$

$$\text{PAT} = \text{Rs.50,000}$$

$$\text{Given tax rate} = 20\%, \text{PBT} = \frac{50,000}{0.8} = \text{Rs.62,500}$$

$$\text{Given EBIT} = \text{Rs.1,00,000}, \text{Interest} = 1,00,000 - 62,500 = \text{Rs.37,500}$$

$$\text{DFL} = \frac{1,00,000}{1,00,000 - 37,500 - \frac{0.1 \times 1,00,000}{1 - 0.2}} = \frac{1,00,000}{50,000} = 2$$

$$\text{DOL} = \frac{4}{2} = 2$$

Hence, if EBIT has to increase by 10%, sales have to be increased by 5%. Hence, the answer is (c).

57. Answer : (c)

Reason : Quick ratio = $\frac{\text{Quick assets}}{\text{Current liabilities}}$

$$\text{Inventory turnover ratio} = 8$$

$$\text{Given sales} = \text{Rs.10,00,000} \text{ and } \text{GPM} = 40\%, \text{COGS} = \text{Rs.6,00,000}$$

$$\text{Inventory} = \frac{\text{COGS}}{\text{Inventory turnover ratio}} = \frac{6,00,000}{8} = \text{Rs.75,000}$$

$$\text{Total assets} = \frac{\text{Sales}}{\text{Total assets turnover ratio}} = \frac{10,00,000}{2} = 5,00,000$$

$$\text{Given FA : CA} = 3 : 1$$

$$CA = \frac{1}{4} \times 5,00,000 = \text{Rs.} 1,25,000$$

$$CR = 2.5$$

$$\therefore CL = \frac{CA}{2.5} = \text{Rs.} 50,000$$

$$QA = \frac{1,25,000 - 75,000}{50,000} = 1$$

Hence, answer is (c).

58. Answer : (a)

$$\begin{aligned} \text{Reason : Effective rate of interest of Bank A} &= 1 + \frac{(1.10)^2}{2} \\ &= 10.25\% \end{aligned}$$

$$\begin{aligned} \text{Nominal rate of interest of Bank B} &= [(1.1025)^{1/12} - 1] \times 12 \\ &= 9.80 \end{aligned}$$

59. Answer : (d)

$$\text{Reason : Yield is calculated as } \frac{F-P}{P} \times \frac{365}{d}$$

Where, F is face value

P is purchase price

d is the duration/maturity period

$$\text{In the given case, yield} = \frac{100-P}{P} \times \frac{365}{60}$$

If yield = 11.5%, P is calculated as,

$$\frac{100-P}{P} \times \frac{365}{60} = 0.115$$

$$\frac{100-P}{P} = \frac{0.115 \times 60}{365}$$

$$\frac{100-P}{P} = 0.0189$$

$$1.0189 P = 100 \Rightarrow P = \frac{100}{1.0189}$$

$$P = \text{Rs.} 98.14.$$

60. Answer : (a)

$$\begin{aligned} \text{Reason : } 1(1.08)^3 + x \text{ FVIFA}_{8\%,3} (1.08) &= 15(1.05)^3 \times 0.2 \\ &= 1.260 + 3.506x = 3.473 \end{aligned}$$

$$x = \frac{3.473 - 1.260}{3.506} = \text{Rs.} 0.630 \text{ lakhs}$$

61. Answer : (e)

Reason : If the current ratio (CR) should be equal to 1.2 i.e., $\frac{CA}{CL}$ should be equal to 1.2, i.e., CA should

be 1.2 CL. i.e., current liabilities should be $\frac{CA}{1.2}$ i.e., $\frac{1200}{1.2} = \text{Rs.} 1000$ lakhs. As the existing current liabilities amount to Rs.1500 lakhs, Rs.500 lakhs of short-term borrowings have to be

repaid to increase the CR to 1.2.

62. Answer : (d)

Reason : Required rate of return = $R_f + \beta (R_m - R_f)$

$$= 6 + 1.15 \times 8$$

$$= 15.2\%$$

New required rate of return = $8 + 1.15 \times 8$

$$= 17.2\%.$$

63. Answer : (c)

Reason : Current yield = $\frac{\text{Coupon interest}}{\text{Market Price}} = 8.33\%$.

$$\therefore \text{Market Price} = \frac{\text{Coupon Interest}}{0.0833} = \frac{0.10 \times 1000}{0.0833} = \text{Rs.1,200 (approx.)}$$

Hence, the bond is trading at a premium of Rs.200 i.e., 20%. Hence, answer is (c).

64. Answer : (a)

Reason :

Returns (%)		Prob %	RiPi (%)	Ri - $\sum Ri$	$(Ri - \sum Ri)^2 Pi$
40% of Alpha + 60% of Beta					
-4 + -1.8	-5.8	0.10	-0.58	-24.3	59.049
6 + 10.8	16.8	0.20	3.36	-1.7	0.578
11.2 + 19.2	30.4	0.40	12.16	11.9	56.644
4.8 + 9.6	14.4	0.20	2.88	-4.1	3.362
2 + 4.8	6.8	0.10	0.68	-11.7	13.689
Expected Return $\sum Ri$			18.50		133.322

$$TRi = \sqrt{133.322} = 11.55\%$$

65. Answer : (e)

Reason : Change in net working capital can be calculated as : $(100 + 60 + 25 - 35) - (80 + 50 + 10 - 40)$

$$= 150 - 100 = \text{Rs.50 lakh}$$

66. Answer : (b)

Reason : Required rate of return on stock A = $R_f + \beta (R_m - R_f)$

$$= 6 + 1.75(15 - 6) = 21.75\%$$

Required rate of return on stock B = $6 + 0.85 (15 - 6) = 13.65$

Excess return = 8.1%

67. Answer : (b)

Reason : Given dividend payout ratio is 0.4 i.e., $\frac{DPS}{EPS} = 0.4$

And the capitalization rate is 12.5 i.e., $\frac{EPS}{\text{Price per share}} = 0.125$.

$$\frac{DPS}{EPS} \times \frac{EPS}{\text{Price/share}} = \frac{DPS}{\text{Price/share}} = \text{Dividend yield}$$

$$= 0.4 \times 0.125 = 0.05 \text{ i.e., } 5\%.$$

68. Answer : (c)

Reason : Weighted beta = $(200 \times 0.5 + 200 \times 2 + 100 \times 4)/500 = 1.8$

Required rate of return according to CAPM = $R_f + B_p (R_m - R_f)$

$$= R_f + 1.8(14 - R_f) = 20.4$$

$$= R_f + 25.2 - 1.8 R_f = 20.4$$

$$= 0.8 R_f = 4.8$$

$$R_f = 6\%$$

New weighted Beta = $(200 \times 0.5 + 200 \times 2 + 100 \times 3)/500$

$$= 1.6$$

New required rate of return = $6 + 1.6(14 - 6)$

$$= 18.8\%.$$

69. Answer : (e)

Reason : According to the rule of 69,

$$\text{Doubling period (in years)} = 0.35 + \frac{69}{i}$$

$$\therefore 4 + \frac{7}{12} = 0.35 + \frac{69}{i}$$

Solving the above equation we get $i = 16.3\%$.

70. Answer : (b)

Reason : Discounted interest payments & Face value as on October 31, 2003

$$= 1000 \times 0.05 \text{PVIFA}_{6\%,13} + 1000 \times 0.05 + 1000 \text{PVIF}_{6\%,13}$$

$$= 442.65 + 50 + 469 = \text{Rs.}961.65$$

The discounted value as on July 31, 2003 = $961.65 \text{PVIF}_{3\%,1}$

$$= 934$$

$$= 930 \text{ Rs. (approx.)}$$

71. Answer : (d)

$$\text{Reason : Average collection period} = \frac{\text{Re ceivables balance}}{\text{Average daily credit sales}}$$

$$\text{Average daily credit sales} = \frac{\text{Sales}}{365}$$

$$\therefore \text{Average collection period} = \frac{\text{Re ceivables balance}}{\text{Credit sales}} \times 365$$

$$\text{Average collection period} = 25 \text{ days (given)}$$

$$\text{Average Receivables balance} = \frac{25+15}{2} = \text{Rs.}20 \text{ lakhs}$$

$$\therefore 25 = \frac{20}{\text{Credit sales}} \times 365$$

$$\text{or Credit sales} = \frac{20 \times 365}{25} = \text{Rs.}292 \text{ lakhs.}$$

$$\therefore \text{Total sales} = \frac{292}{0.8} = \text{Rs.}365 \text{ lakhs}$$

72. Answer : (b)

Reason : According to the single-index model,

$$R_i = \alpha + \beta R_m$$

$$\Rightarrow = 0.04 + 0.9 \times 0.12$$

$$= 14.8\%$$

As the shares are said to be in equilibrium,

$$\frac{D_1}{P_0} + g = R$$

$$= \frac{3 \times 0.6}{40} + g = 0.148$$

$$0.045 + g = 0.148$$

$$= 0.103$$

$$\begin{aligned} \text{MP at the end of 5 years} &= \frac{D_6}{k - g} \\ &= \frac{3 \times 0.6 \times (1.103)^5}{0.148 - 0.103} \\ &= \text{Rs.65.30.} \end{aligned}$$

73. Answer : (c)

$$\text{Reason : } C \text{ PVIFA}_{15\%,5} + 1000 \text{ PVIF}_{15\%,5} = 1200$$

$$C = \text{Rs.210}$$

$$CY = \frac{210}{1200} = 17.5\%$$

74. Answer : (d)

$$\text{Reason : Sustainable growth rate} = \frac{m(1-d) \frac{A}{E}}{\frac{A}{S} - m(1-d) \frac{A}{E}}$$

$$\text{Equity capital} = \text{Rs.12 lakhs}$$

$$\text{Dividend} = 37.5\% = 0.375 \times 12 = \text{Rs.4.5 lakhs}$$

$$\text{ROA} = \text{NPM} \times \text{ATO Ratio}$$

$$\text{NPM} = \frac{\text{ROA}}{\text{ATO}} = \frac{0.16}{1.111} = 14.4\%$$

$$\text{Equity multiplier} = \frac{\text{Average assets}}{\text{Equity}}$$

$$3.75 = \frac{\text{Average assets}}{12}$$

$$\text{Average assets} = \text{Rs.45 lakhs}$$

$$\text{ROA} = \frac{\text{PAT}}{\text{Assets}}$$

$$0.16 = \frac{\text{PAT}}{45}$$

$$\text{PAT} = \text{Rs.7.2 lakhs}$$

$$d = \frac{\text{Dividends}}{\text{PAT}} = \frac{4.5}{7.2} = 0.625$$

$$\begin{aligned} \text{SGR} &= \frac{0.144(1-0.625)3.75}{\frac{1}{1.111} - 0.144(1-0.625)3.75} \\ &= \frac{0.2025}{0.90 - 0.2025} = 29\% \end{aligned}$$

Hence, answer is (d).

75. Answer : (a)

$$\begin{aligned} \text{Reason : Degree of operating leverage (DOL)} &= \frac{Q(P-V)}{Q(P-V)-F} = \frac{QP-QV}{QP-QV-F} \\ &= \frac{\text{Sales} - \text{Variable cost}}{\text{Sales} - \text{Variable cost} - \text{Fixed cost}} \end{aligned}$$

	(Rs. in crores)
Variable costs:	
Cost of goods sold (75%)	825
Selling expenses (80%)	440
Total variable cost	1265
Fixed costs:	
Cost of goods sold (25%)	275
Selling expenses (20%)	110
Administrative expenses	65
Total fixed cost	450

Sales = Rs.2070 crores (given)

$$\therefore \text{DOL} = \frac{2070-1265}{2070-1265-450} = 2.268$$

$$\text{Degree of financial leverage (DFL)} = \frac{\text{EBIT}}{\text{EBIT} - \text{I} - \frac{D_p}{1-t}}$$

$$\begin{aligned} \text{EBIT} &= \text{Net profit} + \text{Taxes} + \text{Interest} \\ &= 196 + 84 + 75 = \text{Rs.355 crores} \end{aligned}$$

$$\text{Interest} = \text{Rs.75 crores (given)}$$

$$\text{Dividend on preference shares adjusted for tax} = \frac{D_p}{1-t}$$

$$\text{Tax rate, } t = \frac{\text{Taxes}}{\text{Profit before tax}} = \frac{\text{Taxes}}{\text{Net profit} + \text{Taxes}} = \frac{84}{196+84} = 0.30 \text{ i.e. } 30\%$$

$$\text{Preference dividend (D}_p\text{)} = 150 \times 0.12 = \text{Rs.18 crores.}$$

$$\therefore \frac{D_p}{1-t} = \frac{18}{1-0.30} = \text{Rs.25.71 crores.}$$

$$\therefore \text{DFL} = \frac{355}{355-75-25.71} = 1.396$$

$$\text{Degree of total leverage (DTL)} = \text{DOL} \times \text{DFL} = 2.268 \times 1.396 = 3.166$$

$$\text{DTL} = \frac{\text{Percentage change in EPS}}{\text{Percentage change in sales revenue}}$$

$$\therefore \text{Percentage change in sales revenue} = \frac{\text{Percentage change in EPS}}{\text{DTL}}$$

$$\text{Given: Desired increase in EPS} = 25\%$$

$$\therefore \text{Required increase in net sales} = \frac{25}{3.166} = 7.9\% \text{ (approximately)}$$

$\therefore$ Net sales should increase by 7.9% in order to increase EPS by 25%.