

Question Paper

Financial Management – I (141) : April 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 is **true**?
 - a. Effective rate of interest is always lower than the nominal interest rate
 - b. The effective rate of interest increases with increase in the frequency of compounding
 - c. The nominal interest rate increases with increase in the frequency of compounding
 - d. The effective and nominal interest rates are equal if the frequency of compounding is less than 4
 - e. The frequency of compounding does not affect the effective and nominal interest rates.
2. Who among the following players in the international capital markets collect the rupee dividends on the underlying shares and repatriate the same to the depository in US dollars/foreign equity?
 - a. Lead Managers
 - b. Underwriters
 - c. Custodian
 - d. Corporate borrowers
 - e. Lenders.
3. If the expected P/E ratio exceeds the stock's current P/E, then which of the following statements is/are **true**?
 - I. Stock is overpriced
 - II. It is time to buy the stock
 - III. The stock is correctly priced
 - a. Only (I) above
 - b. Only (II) above
 - c. Only (III) above
 - d. Both (II) and (III) above
 - e. Both (I) and (II) above.
4. Which of the following money market instruments has a maturity period varying from 2 to 15 days?
 - a. Call money
 - b. Commercial Paper
 - c. Notice money
 - d. Treasury Bill
 - e. Certificate of Deposit.
5. Which of the following will decrease with an increase in the interest rate?
 - a. Future Value Interest Factor
 - b. Future Value Interest Factor For Annuity
 - c. Capital Recovery Factor
 - d. Present Value Interest Factor for a perpetual annuity
 - e. Inverse of Present Value Interest Factor For Annuity.

6. Which of the following is/are **not** systematic risk(s)?
- Inflation Risk
 - Business Risk
 - Market Risk
 - Interest Rate Risk
 - Both (b) and (d) above.
7. Which of the following is a source of funds in a funds flow statement?
- Purchase of fixed assets
 - Purchase of investments
 - Payment of income tax
 - Issue of share capital
 - Repayment of a term loan.
8. Which of the following is/ are objective method (s) used for forecasting sales?
- Sales force estimates
 - Trend analysis
 - Regression analysis
 - All of the above
 - Both (b) and (c) above.
9. Which of the following is **not** an assumption made while computing the sustainable growth rate?
- Net profit margin remains constant
 - Debt-equity ratio remains constant
 - Fixed assets of the firm remain constant
 - Dividend payout ratio remains constant
 - External issue of equity will not be resorted to.
10. Which of the following is **true**?
- A change in YTM affects bonds with a lower YTM more than it does bonds with a higher YTM.
 - Given the maturity, for equal sized increases or decreases in the YTM, price movements are not symmetrical.
 - When the required rate of return is greater than the coupon rate, the value of the bond is more than its par value.
 - Bond's price is directly proportional to its YTM
 - When the required rate of return is more than the coupon rate, the premium on the bond declines as maturity approaches.
11. Which of the following statements is/are **true**?
- Beta of a security increases with an increase in the variance of market returns
 - Beta of a security increases with a decrease in standard deviation of the security's return
 - Beta of a security increases with an increase in the value of the correlation coefficient between the security's return and market return
- Only (I) above
 - Only (II) above
 - Only (III) above
 - Both (I) and (II) above
 - Both (I) and (III) above.

12. The minimum number of directors in a public company and a private company is _____ respectively.
- 2 and 3
 - 2 and 7
 - 5 and 2
 - 3 and 2
 - 2 and 5.
13. Which of the following is **not true** about Commercial Papers (CPs)?
- CPs are negotiable by endorsement and delivery
 - The minimum maturity period of CPs is 15 days
 - CPs are unsecured in nature
 - CPs cannot be issued at a discount to face value
 - Prior approval of RBI is not needed for CP issues.
14. Which of the following is **not true** regarding the Degree of Operating Leverage (DOL)?
- DOL is undefined at the operating BEP
 - If the quantity produced is less than the operating break-even-point, DOL will be negative
 - At the operating break-even point, the quantity produced is computed as the ratio of fixed costs and contribution per unit
 - If the quantity produced is greater than the operating break even point, DOL will be positive and increases as quantity produced increases.
 - None of the above.
15. Which of the following assumptions associated with Capital Asset Pricing Model (CAPM) is/are **not true**?
- The greater the perceived risk of a portfolio, the higher is the return expected by a risk-averse investor.
 - All individuals agree on the nature of return and risk associated with each investment.
 - The choice of buying assets is affected by taxes.
- Only (I) above
 - Only (II) above
 - Only (III) above
 - Both (I) and (II) above
 - Both (II) and (III) above.
16. The security of M/s X Ltd. has the risk of being sold at a high price concession in the secondary market. The risk associated with the security can be termed as
- Interest rate risk
 - Market risk
 - Business risk
 - Financial risk
 - Liquidity risk.
17. Which of the following statements is/are **true**?
- Current yield increases with an increase in the current market price.
 - Current yield increases with an increase in the coupon payment.
 - Current yield decreases with an increase in the face value of the bond.
- Only (I) above
 - Only (II) above
 - Only (III) above
 - Both (I) and (II) above
 - Both (II) and (III) above.

18. Other things remaining the same, which of the following will increase the quantity produced at the operating break-even point?
- I. Increase in the selling price per unit.
 - II. Increase in the variable cost per unit.
 - III. Increase in the fixed costs of the firm.
- a. Only (I) above
 - b. Only (II) above
 - c. Only (III) above
 - d. Both (I) and (II) above
 - e. Both (II) and (III) above.
19. Which of the following **cannot** borrow from the call money market?
- a. Reserve Bank of India
 - b. Discount and Finance House of India
 - c. SBI Mutual Fund
 - d. Securities Trading Corporation of India
 - e. Both (c) and (d) above.
20. Which of the following is reflected by a current ratio?
- a. The amount of current assets that the firm uses to produce its total sales
 - b. The proportion of current assets in the total assets of the firm
 - c. The ability of the firm to meet its current obligations
 - d. The proportion of current liabilities in the total liabilities of the firm
 - e. The ability of the firm to meet its total (long-term as well as short-term) financial obligations.
21. Which of the following statements is/are **true**?
- I. The diversifying effect of each additional stock increases with an increase in the number of stocks in the portfolio.
 - II. The higher the degree of positive correlation between the stocks, the greater is the amount of risk reduction that is possible.
 - III. The portfolio risk will be minimum, if the stocks are perfectly negatively correlated.
- a. Only (I) above
 - b. Only (II) above
 - c. Only (III) above
 - d. Both (I) and (II) above
 - e. Both (I) and (III) above.
22. Which of the following risks is measured by the capital structure ratios?
- a. Business risk
 - b. Financial risk
 - c. Inflation risk
 - d. Market risk
 - e. Liquidity risk.
23. Which of the following is an example of a diversifiable risk?
- a. Ability of a company to obtain adequate supply of raw materials.
 - b. Changes in the tax structure
 - c. Reduction in the purchasing power of money
 - d. Recession in the economy
 - e. Introduction of a restrictive credit policy by RBI.

24. Which of the following ratios reflects the efficiency of utilization of assets by firm to produce its total sales?
- Debt-assets ratio
 - Earning power
 - Inventory turnover ratio
 - Asset turnover ratio
 - Net profit margin.
25. M/s Venus Ltd. sold its business as an operating one and realized Rs.4 crores. The amount realised can be termed as
- Liquidation value
 - Replacement value
 - Going concern value
 - Market value
 - Book value.
26. A, B and C are three securities of which A has the least risk, B has moderate risk and C is the riskiest. Which of the following statements is **true**?
- C has the narrowest probability distribution
 - Variability of returns is maximum in case of B
 - The probability distribution of A is wider than that of B
 - Variability of returns is maximum in case of A
 - The probability distribution of C is wider than that of A.
27. To which of the following categories of ratios does Debt-Asset ratio belong?
- Earnings ratios
 - Coverage ratios
 - Capital structure ratios
 - Liquidity ratios
 - Efficiency ratios.
28. If the Degree of Financial Leverage of M/s Twiky's Ltd. is zero, which of the following statements is/are **true**?
- The company is not paying any preference dividend
 - The interest expense for the firm is zero
 - The company has only fixed costs and no variable costs
 - The EBIT of the company is zero
 - All of the above.
29. Which of the following will lead to an increase in the expected Price-Earning ratio?
- Increase in the expected dividend payout ratio
 - Increase in the cost of equity capital
 - Increase in the growth rate
- Only (I) above
 - Only (II) above
 - Only (III) above
 - Both (I) and (III) above
 - Both (II) and (III) above.
30. Which of the following euro instruments is a medium-term legally binding commitment under which a borrower can issue short-term paper, of up to one year?
- Note Issuance Facilities (NIFs)
 - Commercial paper
 - Straight debt bonds
 - Floating Rate Notes (FRNs)
 - Medium-term notes.

31. "Statement of Changes in Financial Position" is also known as
- Proforma Balance sheet
 - Proforma income statement
 - Cash budget
 - Sales budget
 - Funds flow statement.
32. Which of the following is/are **true** regarding price-earnings ratio (P/E)?
- It reveals how earnings affect the market price of the firm's stock
 - It is the most popular financial ratio in the stock market for secondary market investors
 - It is used to calculate the rate of return investors expect before they purchase the stock
- Only (I) above
 - Both (I) and (II) above
 - Both (I) and (III) above
 - Both (II) and (III) above
 - All (I), (II) and (III) above.
33. Which of the following statements is **not true**?
- An increase in fixed cost will increase the degree of operating leverage (DOL)
 - An increase in interest on long term debt will decrease the degree of financial leverage (DFL)
 - An increase in the contribution per unit will decrease the level of output at the overall break even point
 - An increase in fixed costs will increase the degree of total leverage (DTL)
 - An increase in preference dividend will increase degree of financial leverage.
34. According to Du-Pont equation for Return On Equity (ROE), other things remaining constant, which of the following statements is/are **false**?
- An increase in the net profit margin will increase the ROE
 - A decrease in debt to assets ratio will increase the ROE
 - A decrease in return on assets will decrease the ROE
 - An increase in the average asset turnover will increase the ROE
 - Both (b) and (c) above.
35. Which of the following are sterling denominated foreign bonds raised in the United Kingdom domestic securities market?
- Samurai Bonds
 - Yankee Bonds
 - Bulldog Bonds
 - Shibosai Bonds
 - Matador Bonds.
36. Which of the following are fixed-income securities having a maturity of over one year?
- Commercial Papers
 - Medium-Term Notes
 - American Depository Receipts
 - Treasury Bills
 - Certificate of Deposits.
37. Who among the following categories of people try to obtain risk free profits by simultaneously buying and selling similar instruments in different markets?
- Arbitrageurs
 - Speculators
 - Factors
 - Brokers
 - Authorized Dealers.

38. The sinking fund factor is the inverse of
- Capital Recovery Factor
 - Future Value Interest Factor
 - Future Value Interest Factor for Annuity
 - Present Value Interest Factor for Annuity
 - Present Value Interest Factor.
39. Which of the following is **not true** with respect to Certificate of Deposits (CDs)?
- Banks issue CDs at a discount to face value
 - CDs are issued by well-known companies having a high credit rating
 - CDs are freely transferable by endorsement and delivery
 - The default risk in the case of CDs is almost nil
 - There is no ceiling on the maximum amount that can be raised by CDs.
40. The par value of a bond of M/s VB Ltd. is Rs. 1,000. The coupon rate on the bond is 13% and the required rate of return on the bond is 8%. If X is the value of bond when 6 years are left to maturity, Y is the value of the bond when 3 years are left to maturity and Z is the value of the bond at maturity, which of the following statements is/are **true**?
- $X < Y$
 - $Y < Z$
 - $X > Y$
 - $Z = \text{Rs. } 1,000$
 - Both (c) and (d) above.

END OF SECTION A

Section B : Problems (60 Points)

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

41. M/s. Fincap Ltd. has 10,000 outstanding equity shares of face value Rs.20 per share. The net income of the company is Rs.50,000. If the company pays out 40% of its earnings as dividend and the market price of the share is Rs.50, the dividend yield is

- a. 4%
- b. 8%
- c. 10%
- d. 12%
- e. 16%.

(1 point)

42. Consider the following data regarding M/s. Delta Ltd:

Total assets	Rs.56 lakhs
Fixed operating costs	Rs.24 lakhs
Variable cost to sales ratio	0.6
Total asset turnover ratio	2
Interest coverage ratio	3.2

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

- a. If the sales increase by 1%, EPS will increase by 3.12%
- b. If the sales decrease by 1%, EBIT will decrease by 2.15%
- c. If EBIT increase by 1%, EPS will increase by 3.12%
- d. If the sales increase by 1%, EBIT will increase by 1.56%
- e. Both (a) and (b) above.

(3 points)

43. The probability distribution of returns of stock of M/s. ACRO Ltd. and the returns on market are given below:

Probability (P)	Returns of stock of M/s. ACRO Ltd. (in %)	Market returns (in %)
0.30	7	9
0.35	8	5
0.15	14	10
0.20	16	14

The variance associated with the market returns is $10.6875(\%)^2$. The risk-free rate of return is 6%. According to CAPM, the risk premium for the stock of M/s. ACRO Ltd. is

- a. 1.77%
- b. 2.43%
- c. 2.56%
- d. 2.72%
- e. 3.39%.

(3 points)

44. Mr. Ashish borrowed an amount of Rs. 4,80,000 from M/s. Paywell Finance Ltd. As per the loan agreement, he has to repay Rs.3 lakhs at the end of 7th year, Rs.4 lakhs at the end of 8th year, Rs.2 lakhs at the end of 9th year and Rs.1 lakh at the end of 10th year from now. In order to meet these payments, he wants to deposit money in a bank scheme that offers an interest rate of 9% p.a. The approximate amount that Mr. Ashish should invest at the end of every year for a period of 6 years, so that he can repay the loan as per the agreement is
- Rs.1,02,090
 - Rs.1,11,270
 - Rs.1,21,293
 - Rs.1,28,905
 - Rs.1,89,389.

(3 points)

45. The following items are extracted from the Balance Sheet of M/s. PAL Ltd.

	2003 (in Rs.)	2002 (in Rs.)
Stock	2,90,000	2,20,000
Sundry Debtors	2,65,000	2,45,000
Sundry Creditors	2,82,000	1,90,000
Bills Payable	1,30,000	1,20,000
Cash in hand	85,000	60,000
Prepaid expenses	42,000	45,000

The net increase/decrease in the working capital for the year 2002 - 2003 is

- A decrease of Rs.15,000
 - A decrease of Rs.10,000
 - An increase of Rs.10,000
 - An increase of Rs.15,000
 - An increase of Rs.2,14,000.
- (1 point)
46. Mr. Vivek purchased a coupon-bearing debenture of the face value Rs.1,500 for Rs.1,800. At the end of the year the price of the security increased to Rs.2,000. If the rate of return earned on this debenture is 20%, the amount of coupon received on the debenture is
- Rs. 50
 - Rs. 60
 - Rs.100
 - Rs.110
 - Rs.160.

(1 point)

47. The following information is given about M/s. SP Ltd.:

Inventories	Rs.4.0 lakhs
Sundry debtors	Rs.3.0 lakhs
Cash and Bank balances	Rs.5.0 lakhs
Short-term bank borrowings	Rs.1.0 lakhs
Spontaneous liabilities	Rs.2.2 lakhs

The quick ratio for the firm is

- 5.45
- 3.75
- 3.64
- 2.50
- 1.56.

(1 point)

48. The average collection period for M/s. Beta. Ltd. is 45 days and the average accounts receivables of the company is Rs. 37,000. The annual sales for the company, assuming 360 days in a year, is
- a. Rs.3,15,000
 - b. Rs.2,96,000
 - c. Rs.2,50,000
 - d. Rs.2,45,000
 - e. Rs.2,34,567.

(1 point)

49. If the return on assets is 10% and the debt to assets ratio is 1:3, the return on equity is
- a. 16.19 %
 - b. 15.89 %
 - c. 15.00 %
 - d. 14.02 %
 - e. 13.26 %.

(2 points)

50. The face value of a T-Bill is Rs.100. The bid made by Mr. A for Rs.96 was accepted by RBI. If the yield earned on the bill is 16.71% p.a., the maturity period of the bill is (Assume 365 days a year)
- a. 14 days
 - b. 28 days
 - c. 91 days
 - d. 182 days
 - e. 364 days.

(1 point)

51. If the interest rate is 9% per annum, how much should Mr. Ashish invest today in a bank scheme that would fetch him an annuity of Rs.2,000 for a period of 6 years commencing from the beginning of fourth year?
- a. Rs. 6,352.18
 - b. Rs. 6,926.38
 - c. Rs. 7,554.42
 - d. Rs. 8,232.32
 - e. Rs.10,655.50.

(2 points)

52. The Profit After Tax (PAT) for M/s. KVP Ltd. is Rs.2,40,000, preference dividends is Rs.30,000 and the number of outstanding shares is 30,000. If the market price of the share is Rs.100 and the book value of the share is Rs.80, the capitalization rate for M/s. KVP Ltd is
- a. 7.00%
 - b. 8.00%
 - c. 8.75%
 - d. 9.00%
 - e. 10.00%.

(1 point)

53. Consider the following information of M/s. SS Ltd for the year 2002-03:

Assets to sales ratio	0.60
Spontaneous liabilities to sales ratio	0.15
Current liabilities to sales ratio	0.20
Net profit margin	0.06
Dividend payout ratio	0.40

The maximum sales growth that can be achieved without resorting to external financing is

- a. 5.63%
- b. 8.70%
- c. 9.89%
- d. 13.64%
- e. 16.80%.

(3 points)

54. M/s. Excel Ltd. has declared a dividend of Rs.4 per share last year. If the net profit is Rs.300 lakhs, growth rate in dividends is 6% p.a. and the current market price of the share is Rs.50, the required rate of return is

- a. 10.24%
- b. 14.00%
- c. 14.48%
- d. 18.00%
- e. 18.72%.

(1 point)

55. M/s. Paras Ltd. issued bonds having a par value of Rs.1000, maturity value of Rs.1,200 and a coupon rate of 17%. If the current market price of the bond is Rs.1,114 and the YTM of the bond by approximation method is 16.4%, the maturity period of the bond is approximately

- a. 6.0 years
- b. 5.5 years
- c. 5.0 years
- d. 4.4 years
- e. 3.0 years.

(2 points)

56. The required rate of return on security Z as per CAPM is 10%. If the current purchase price of the security is Rs.40, the last paid dividend is Rs.3 and the growth rate is 5%, then what should be the increase/decrease in the price of security Z such that it is at equilibrium?

- a. Increase by Rs.23
- b. Increase by Rs.20
- c. Decrease by Rs.15
- d. Decrease by Rs.23
- e. Security is already at equilibrium.

(2 points)

57. Consider the following information regarding the bond issued by M/s. Zeta Ltd.:

Face value of the bond	: Rs.1000
Coupon (payable annually)	: 9% p.a
Maturity period	: 5 years

The above bonds are issued at a discount of 5% and are redeemed at a premium of 10%

The intrinsic value of the bond at the required rate of return of 8% p.a. is

- a. Rs.1,007.20
- b. Rs.1,074.80
- c. Rs.1,090.35
- d. Rs.1,108.40
- e. Rs.1,473.60.

(2 points)

58. Consider the following information of M/s. ABC Ltd:

Preference dividend	Rs.30,000
Corporate tax rate	40%
Interest	Rs.65,000
Fixed expenses	Rs.6,00,000
Selling price per unit	Rs.900
Variable cost per unit	Rs.400

The level of output at which DTL will be undefined is

- a. 1480 units
- b. 1430 units
- c. 1390 units
- d. 1366 units
- e. 1354 units.

(2 points)

59. During the year 2002-03, M/s. X Ltd. realized receivables worth Rs.10,000 and there is an increase of Rs.30,000 in the inventories. The additional inventory was bought on credit. The impact of the above on the net working capital will be

- a. Increase by Rs.10,000
- b. Decrease by Rs.40,000
- c. No change in the net working capital
- d. Increase by Rs.40,000
- e. Decrease by Rs.10,000.

(1 point)

60. Consider the following information regarding M/s. Z Ltd. for the year 2002-03:

Earnings after tax	Rs.9,00,000
Interest payment	Rs.8,00,000
Assets turnover	1.50
Net profit margin	5%
Corporate tax rate	40%

Earning power of the company is

- a. 7.5%
- b. 8.5%
- c. 14.2%
- d. 19.2%
- e. 25.4%.

(3 points)

61. The effective rate of interest under a particular scheme is 8.48%. If the frequency of compounding is three times in a year, the nominal rate of interest under the scheme is

- a. 6.78%
- b. 7.35%
- c. 8.74%
- d. 8.25%
- e. 9.35%.

(1 point)

62. The total capital employed by M/s. Venus Ltd. is Rs.36,00,000. The firm has debt-equity ratio of 5:4. The ratio of owner's equity to fixed assets is 8:15. The amount of fixed assets in the company is

- a. Rs.30,00,000
- b. Rs.36,00,000
- c. Rs.40,00,000
- d. Rs.42,00,000
- e. Rs.50,00,000.

(3 points)

63. The correlation coefficient between return of M/s. X Ltd. and the market return is 0.45. The variance of M/s. X Ltd. is 3.33 and that for the market is 10. The risk-free rate of return is 5% and the market return is 10%. The last paid dividend is Rs.2 and the current purchase price is Rs.25. The growth rate for the company is 3%.

The required rate of return on the security as per the Capital Asset Pricing Model is

- a. 5.12%
- b. 6.30%
- c. 7.25%
- d. 8.14%
- e. 11.24%.

(2 points)

64. M/s. ABC Ltd. is expected to realize Rs.25 crores by liquidating all the assets. The amount to be paid to creditors is Rs.10 crores. If there are 1.5 crore equity shares and the networth of the firm is Rs.18 crores, the liquidation value per share of M/s. ABC Ltd. is

- a. Rs. 6.67
- b. Rs.10.00
- c. Rs.12.00
- d. Rs.16.67
- e. Rs.23.33.

(1 point)

65. The EBIT for a company at 6,000 level of production is Rs.7,50,000. At the financial break even point, the EBIT of the company is Rs.2,10,000. The Degree of Financial Leverage (DFL) for the company at 6000 level of production is

- a. 1.56
- b. 1.51
- c. 1.49
- d. 1.46
- e. 1.39.

(2 points)

66. The following information is related to M/s. Indigo Ltd. for the year 2002-03:

Current ratio	31:13
Quick ratio	18:13
Net working capital	Rs.9,00,000

The average inventory is

- Rs.9,00,000
- Rs.7,25,000
- Rs.6,50,000
- Rs.5,00,000
- Rs.4,50,000.

(2 points)

67. The current sales and income of M/s. Excel Industries Ltd. is Rs.25 lakhs and Rs.4 lakhs respectively. It is expected to increase its sales by 30%. If the company maintains the net profit margin ratio, pay out 30% as dividends and does not resort to external equity but maintains the debt-equity ratio of 1.75, the increase in borrowings will be

- Rs.2.10 lakhs
- Rs.3.64 lakhs
- Rs.5.20 lakhs
- Rs.6.37 lakhs
- Rs.9.10 lakhs.

(2 points)

68. The balance sheet for M/s. CySpace Ltd. which is a semi-conductor manufacturing firm is given below:

Balance Sheet as on Mar 31st 2003

Liabilities		Assets	
			Rs. (in Lakhs)
Share Capital	220	Fixed Assets	450
Retained Earnings	90	Inventories	120
Long-term Loan	210	Accounts Receivable	160
Short-term Borrowings	105	Cash and Bank	70
Accounts Payable	160		
Provisions	15		
	800		800

The sales for the year 2002-2003 were Rs. 12 crore and they are expected to go up by 26% in the year 2003-2004. Last year's net profit margin of 5% and the dividend payout ratio of 40% are expected to remain same in the year 2003-2004. The external funds requirement of the company for the year 2003-2004 is Rs.117.14 lakhs. The company wants to raise external funds through short-term borrowings and equity (in the same order). If the current ratio should not be less than 1.2, the minimum amount of equity to be raised by the company is

- Rs. 94.50 lakhs
- Rs. 89.90 lakhs
- Rs. 75.14 lakhs
- Rs. 45.01 lakhs
- Rs. 22.64 lakhs.

(3 points)

69. According to Rule of 69, an amount deposited under the fixed deposit scheme of M/s. AB Bank Ltd. doubles in 7 years 9 months. The interest rate offered by the bank is

- a. 8.52%
- b. 8.90%
- c. 9.14%
- d. 9.25%
- e. 9.32%.

(1 point)

70. M/s. Varun Textiles Ltd. 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 of Rs.50 each at the end of one year. If the expected share price at the end of one year is Rs.60 and the required rate of return is 12%, the value of convertible is

- a. Rs. 98
- b. Rs. 107
- c. Rs. 116
- d. Rs. 125
- e. Rs. 142.

(2 points)

71. Consider the following data of M/s. Super Colors Ltd. for the year 2002 – 03:

Profit after tax	Rs.14.98 lakhs
Interest expenses	Rs.9.2 lakhs
Non cash charges	Rs.6.5 lakhs
Repayment of term loan	Rs.7.5 lakhs
Effective tax rate	26%

Debt-service coverage ratio of the company is

- a. 1.59
- b. 1.76
- c. 1.84
- d. 2.24
- e. 2.70.

(2 points)

72. Consider the following data regarding M/s. Zee Ltd. for the year 2002:

Cost of goods sold	: Rs.39,00,000
Gross profit margin	: 25%
Average receivables turnover ratio	: 52 : 15
Quick assets	: Rs.18,00,000

The cash balance is

- a. Rs.2,75,000
- b. Rs.3,00,000
- c. Rs.6,00,000
- d. Rs.9,00,000
- e. Rs.9,56,250.

(3 points)

END OF SECTION B

Suggested Answers

Financial Management – I (141) : April 2003

Section A : Basic Concepts

1. Answer : (b)

Reason : The interest rate usually specified on an annual basis in a loan agreement or security is known as the nominal rate of interest. If compounding is done more than once a year, the actual rate of interest paid (or received) is called effective interest rate. Effective interest rate would be higher than the nominal interest rate.

The effective rate of interest increases with increase in the frequency of compounding. For example, the effective rate of interest under quarterly compounding will be more than the effective rate of interest under semi-annual compounding. Hence option (b) is correct.

2. Answer : (c)

Reason : Custodians hold the underlying shares and collect rupee dividends on the underlying shares and repatriate the same to the depository in US dollars/foreign equity.

Hence (c) is the answer.

Lead managers undertake activities like preparation of offer circular, marketing the issues etc.

Underwriters of the issue bear interest rate or market risks moving against the issuer before they have placed bonds or depository receipts.

3. Answer : (b)

Reason : If the E(P/E) ratio is greater than the actual P/E ratio, it indicates that the stock is underpriced and this is the time to buy the stock. If the E(P/E) ratio is less than the actual P/E, the stock is currently overpriced and it is the time to sell the stock. Hence statements (I) and (III) are incorrect whereas statement (II) is correct.

Therefore option (b) is the answer.

4. Answer : (c)

Reason : The money that is lent for more than one day but less than 15 days is referred to as Notice money. Hence option (c) is correct.

The money that is lent for one day in the money market is known as “call money”.

The maturity period in case of commercial paper varies from 15 days to 1 year.

Certificate of Deposits can be issued by banks for a minimum period of 15 days to a maximum of one year. A financial institution can issue CDs for a minimum period of 1 year and a maximum period of 3 years.

At present Treasury Bills with a maturity period of 14 days, 91 days and 364 days are being issued in India.

5. Answer : (d)

Reason : Present value factor for a perpetual annuity = $\frac{1}{i}$. Hence it decreases with an increase in the interest rate. Hence (d) is the correct option.

Future Value Interest Factor = $(1+i)^n$. Hence it increases with increase in the interest rate.

Future Value Interest Factor For Annuity (FVIFA) = $\frac{(1+i)^n - 1}{i}$. FVIFA also increases with increase in the interest rate.

Capital Recovery Factor = $\frac{i(1+i)^n}{(1+i)^n - 1}$. It is the inverse of PVIFA, which decreases with

increase in interest rate. Therefore, Capital Recovery Factor increases with increase in the interest rate.

Inverse of PVIFA is capital recovery factor, which increases with increase in the interest rate.

Hence, options (a), (b), (c) and (e) are incorrect.

6. Answer : (b)

Reason : Non-diversifiable risk or the systematic risk is that part of the total risk that is related to the general economy as a whole and hence cannot be eliminated or diversified. Business risk is the risk of doing business in a particular industry or environment and can be reduced or eliminated by diversification. Hence, (b) is the answer.

Inflation risk i.e. the risk of reduction in purchasing power, market risk i.e. the risk due to fluctuations in the securities market and interest rate risk i.e. the risk arising due to changes in the level of interest rates are referred as systematic risks.

7. Answer : (d)

Reason : Issue of share capital brings in funds and hence it is a source of funds. Hence option (d) is correct. Purchase of fixed assets, purchase of investments, payment of income tax and repayment of a term loan involve outflow of funds and are examples of uses of funds.

8. Answer : (e)

Reason : Trend analysis and regression analysis are objective methods of forecasting sales. Sales force estimates is a subjective method of forecasting sales in which the opinion of the sales representatives is considered for estimating the sales figure. Hence, (e) is the answer.

9. Answer : (c)

Reason : In computing the sustainable growth rate, one of the assumptions made is that the assets of the firm will increase proportionately to sales. Hence (c) is incorrect.

The other assumptions made are

- i. Net profit margin is constant
- ii. Dividend pay-out ratio and debt-equity ratio will remain constant.
- iii. External issue of equity will not be resorted to

Hence options (a), (b), (d) and (e) are the assumptions of the sustainable growth rate.

10. Answer : (b)

Reason : Given the maturity, the change in the bond price will be greater with a decrease in the bond's YTM than the change in the bond price with an equal increase in the bond's YTM. In other words, for equal sized increases and decreases in the YTM, price movements are not symmetrical. Hence option (b) is correct.

Option (a) is incorrect as a change in YTM affects bonds with higher YTM more than it does bonds with a lower YTM.

Option (c) is incorrect because when the required rate of return is greater than the coupon rate, the value of the bond is less than its par value.

Option (d) is incorrect as bond's price moves inversely to its YTM.

Option (e) is incorrect because when the required rate of return is less than the coupon rate, the bond is said to be trading at discount and not premium.

11. Answer : (c)

Reason : β of the security = $\frac{\text{Cov}(r_s, r_m)}{\sigma_m^2}$ where r_s is return on security and r_m is market return.

Also $\beta = \frac{\sigma_{sm} \sigma_s \sigma_m}{\sigma_m^2}$ where σ_{sm} is the correlation coefficient of market return and stock return.

Hence, increase in the value of correlation coefficient between security and market returns, will and increase the value of β . Hence statement III is correct and option (c) is the answer.

Statement I is false as $\hat{\sigma}$ decreases with increase in variance of market returns. Statement II is false as decrease in standard deviation of the security's return will decrease the value of β .

12. Answer : (d)

Reason : A public company should have atleast 3 directors and a private company should have atleast 2 directors.

13. Answer : (d)

Reason : Commercial papers are short-term promissory notes issued at a discount to face value by well-known companies that are financially strong and carry a high-credit rating. Hence statement (d) is not correct.

CPs are negotiable by endorsement and delivery. Hence statement (a) is correct.

The maturity of CPs varies from 15 days to one year. Hence statement (b) is correct.

CPs are purely unsecured as they are not backed by any assets of the issuing company. Hence statement (c) is correct.

No prior approval of RBI is needed for CP issues and underwriting of the issue is not mandatory. Hence statement (e) is correct.

Hence option (d) is the answer.

14. Answer : (d)

Reason : At the operating break even point DOL is undefined. At this level the quantity produced is computed as:
$$\frac{\text{Fixed costs}}{\text{Selling price per unit} - \text{Variable cost per unit}}$$

If the quantity produced is greater than the operating break even point, DOL will be positive and it decreases as the quantity produced increases. Hence option (d) is incorrect.

15. Answer : (c)

Reason : One of the assumptions associated with the Capital Asset Pricing Model is that taxes do not affect the choice of buying assets.

Hence statement III is incorrect and option (c) is the answer.

The other assumptions are (i) investors are risk-averse i.e. the greater the perceived risk of a portfolio, the risk-averse investor expects a higher return to compensate the risk. (ii) Investors make their investment decisions based on a single-period horizon. (iii) All individuals assume that they can buy assets at the going market price and they all agree on the nature of the return and risk associated with each investment.

Hence Statements I and II are correct.

16. Answer : (e)

Reason : Liquidity risk is the risk associated with the secondary market in which the security is traded. The greater the uncertainty about the time element and the price concession, the greater is the liquidity risk. Hence (e) is the answer.

Interest rate risk is the variability in a security's return resulting from changes in the level of interest rates. Market risk refers to the variability of returns due to fluctuations in the securities market. Business risk is the risk of doing business in a particular industry or environment. Financial risk is the risk that arises when companies resort to financial leverage or the use of debt financing.

17. Answer : (b)

Reason : Current yield is computed as
$$\frac{\text{Coupon payment}}{\text{Market Price}}$$
. Current yield is directly proportional to the coupon payment; hence it increases with increase in the coupon payment. Therefore statement II is correct.

Current yield decreases with increase in the market price. Hence statement I is incorrect.

Current yield is directly proportional to coupon payment, which is computed as coupon rate x Face value. Hence other things remaining same, the current yield increases with increase in the face value. Hence statement III is incorrect.

Therefore option (b) is the answer.

18. Answer : (e)

Reason : The quantity produced at operating break-even point is computed as $\frac{F}{(S-V)}$,

where F represents the fixed costs of the firm
S represents the selling price per unit.
V is the variable cost per unit.

Other things remaining the same, increase in fixed costs will increase the quantity produced at operating break-even point.

Other things remaining the same, increase in the variable costs will decrease the denominator, hence it will increase the quantity produced at operating break-even point. Hence, II and III are correct.

Other things remaining the same, increase in the selling price per unit will increase the denominator, hence it will decrease the quantity produced at operating break-even point. Hence, I is incorrect and the answer is (e).

19. Answer : (c)

Reason : The participants in the call money market are split into two categories. The first comprises those who can borrow as well as lend in the market, e.g. Reserve Bank of India, Discount and Finance House of India and Securities Trading Corporation of India. The second category comprises those who can only lend but cannot borrow in this market e.g. financial institutions and mutual funds.

Hence SBI mutual fund can lend but cannot borrow from the call money market.

Hence option (c) is the correct choice.

20. Answer : (c)

Reason : Current ratio is a liquidity ratio that measures the ability of the firm to meet its current obligations. Hence (c) is the answer.

21. Answer : (c)

Reason : The amount of risk reduction depends on the degree of correlation between the stocks. The portfolio risk will be minimum if the stocks are perfectly negatively correlated. Hence, statement III is correct.

Lower the degree of positive correlation, greater is the amount of risk reduction that is possible. Hence, statement II is incorrect.

Statement III is incorrect as the diversifying effect of each additional stock diminishes with increase in number of stocks. Hence, (c) is the answer.

22. Answer : (b)

Reason : Capital structure ratios indicate the proportion of debt in the capital structure of a firm and hence they indicate the financial risk of the firm. Hence option (b) is the answer.

23. Answer : (a)

Reason : Diversifiable risks are those risks that are specific to a company or industry and hence can be eliminated by diversification. When a company is not able to obtain adequate supply of raw materials, it becomes a source of diversifiable risk. Hence option (a) is the correct choice.

Changes in tax structure, recession in the economy, the credit policy introduced by RBI and reduction in the purchasing power of the economy are examples of non-diversifiable risks. These risks are related to the general economy and cannot be eliminated by the process of diversification.

24. Answer : (d)

Reason : Asset turnover ratio reflects the efficiency of utilization of assets by a firm to produce its total sales. Hence (d) is the answer.

Debt-assets ratio measures the extent to which the borrowed funds support the firm's assets.

Inventory turnover ratio measures how fast the inventory is moving through the firm and generating sales.

Earning power is a measure of operating profitability and is not affected by interest and tax payments.

Net profit margin expresses the earnings left for shareholders as a percentage of net sales.

25. Answer : (c)

Reason : Going Concern Value is the amount that a company can realize if the business is sold in an operating condition. Hence option (c) is the correct choice.

Book Value is an accounting concept in which assets are valued at historical costs and are depreciated over the years.

Replacement Value is the amount required to replace the existing assets in the current condition

Liquidation Value is the amount that a company could realize if it sold its assets after terminating its business.

Market Value is the current price at which the asset can be bought or sold.

26. Answer : (e)

Reason : The width of the probability distribution of rates of return of a security is a measure of risk. The wider the probability distribution, the greater is the risk (i.e. greater the variability of returns). Hence, in the above question, A will have the narrowest probability distribution as it is least risky. In other words the variability in the returns of security A will be minimum. Security C will have the widest probability distribution as it is the riskiest of all the three. In other words, the variability of returns is maximum in case of security C. Security B will be intermediate to these two securities. Hence, options (a), (b), (c) and (d) are wrong. Option (e) is the correct choice.

27. Answer : (c)

Reason : The Debt-Asset ratio measures the extent to which the borrowed funds support the firm's assets. It is an example of capital structure ratios. Hence option (c) is the correct choice.

28. Answer : (d)

Reason : Degree of Financial Leverage(DFL) is computed as
$$\frac{\text{EBIT}}{\text{EBIT} - I - \frac{D_p}{(1-T)}}$$

If DFL = 0, then it implies that EBIT=0.

29. Answer : (d)

Reason : Expected Price-earning ratio is computed as
$$\frac{\text{Expected Dividend payout ratio}}{\text{Cost of capital} - \text{growth rate}}$$

From the above equation, we can conclude that increase in the expected dividend payout ratio and increase in the growth rate will lead to increase in Expected Price-earning ratio. Hence statements I and III are correct. Therefore, option (d) is the answer.

Increase in the cost of capital will decrease the Expected Price-earning ratio.

30. Answer : (a)

Reason : Note Issuance Facility (NIF) is a medium-term legally binding commitment under which a borrower can issue short-term paper, of upto one year. Hence (a) is the answer.

Commercial papers are short-term unsecured promissory notes, which pay a fixed amount. Straight debt bonds and floating rate notes are long-term instruments having a maturity of over one year.

31. Answer : (e)

Reason : A fund flow statement is a statement which explains the various sources from which funds were raised and the uses to which these funds were put. Hence (e) is the answer. Proforma income statement reflects the future profit/loss of the company. Proforma balance sheet helps in estimating the financial position of the company at some time in future. Cash budgets are detailed projections of the specific incidence of cash moving in and out of the business. Sales budget helps in forecasting the sales for a future period. Hence, (e) is the answer.

32. Answer : (d)

Reason : The price-earnings ratio (also P/E multiple) is calculated by taking the market price of the stock and dividing it by earnings per share.

The ratio gives the relationship between the market price of the stock and its earnings by revealing how earnings affect the market price of the firm's stock. If a stock has a low P/E

multiple, for example 3/1, it may be considered as an undervalued stock. If the ratio is 80/1, it may be viewed as overvalued. Hence, (I) is true. It is the most popular financial ratio in the stock market for secondary market investors. The P/E ratio method is useful as long as the firm is a viable business entity, and its real value is reflected in its profits. Hence (II) is true. It helps to determine the expected market value of a stock. Hence (III) is true. The P/E ratio also may be used to calculate the rate of return investors expect before they purchase a stock.

33. Answer : (b)

Reason : $DFL = \frac{EBIT}{EBIT - I - \frac{D_p}{(1-T)}}$. Hence, increase in interest on long-term debt (i.e. I) and preference

dividend would increase the Degree of Financial Leverage (DFL). So the statement in option

(b) is false. Degree of Operating Leverage = $\frac{Q(S-V)}{Q(S-V)-F}$. Therefore, increase in fixed costs

(i.e. F) increases the Degree of Operating Leverage. So the statement in option (a) is correct.

The level of output at the overall break-even point can be computed as:

$Q = \frac{F + I + \frac{D_p}{(1-T)}}{(S-V)}$. Therefore, increase in the contribution per unit (i.e. S-V) would decrease

the level of output at the overall break even point. So statement in option (c) is correct.

$DTL = \frac{Q(S-V)}{Q(S-V)-F-I-\frac{D_p}{(1-T)}}$. Hence, increase in fixed costs increases the Degree of Total

Leverage (DTL). So option (d) is correct.

As already explained increase in preference dividend increases the DFL.

34. Answer : (b)

Reason : According to Du-Pont equation:

Return On Equity (ROE) = Net Profit Margin x Average Asset Turnover x Equity Multiplier

Where, Equity Multiplier = $\frac{1}{1 - \text{Debt to assets ratio}}$.

Hence ROE will increase when the equity multiplier increases or in other words when the debt to assets ratio increases. Hence, option (b) is incorrect.

When net profit margin and /or average asset turnover ratio increases ROE will increase. Hence, options (a) and (d) are correct.

ROE can also be written as Return On Equity (ROE) = Return on assets x Equity Multiplier.

Hence, Decrease in Return On Assets decreases the ROE. So option (c) is also correct.

35. Answer : (c)

Reason : Bulldog bonds are sterling denominated foreign bonds which are raised in the United Kingdom domestic securities market. Hence option (c) is the correct choice.

Samurai bonds are bonds issued by non-Japanese borrowers in the domestic Japanese markets.

Yankee bonds are US dollar denominated bonds issued by foreign borrowers in the US domestic markets.

Shibosai Bonds are Yen denominated privately placed bonds issued in the Japanese Markets.

Matador bonds are foreign bonds issued in Spain.

36. Answer : (b)

Reason : Medium-Term Notes (MTNs) are defined as sequentially issued fixed-income securities which have a maturity of over one year. It enables an issuer to issue Euronotes for different maturities, from one year up to the desired level of maturity.

Hence (b) is the correct choice.

Commercial Papers are short-term, unsecured promissory notes issued by well known companies that are financially strong and carry a high credit rating.

American Depository Receipts (ADRs) are dollar denominated negotiable certificates and they represent a non-US company's publicly traded equity.

Treasury Bills are short-term instruments issued by the government to tide over short-term liquidity shortfalls.

Certificate of Deposits are issued by banks in the form of usance promissory notes. These bank deposits are negotiable and are in marketable form bearing specific face value and maturity.

Hence, options (a), (c), (d) and (e) are false.

37. Answer : (a)

Reason : Arbitrageurs are participants who work towards obtaining risk free profits by simultaneously buying and selling similar instruments in different markets. Hence, (a) is the correct choice.

Speculators are traders who enter the futures or options contract, with a view of making profit from the subsequent price movements and they operate at a high level of risk in anticipation of profits.

Factors manage the receivables of the firm and brokers deal in securities on their own account. Authorized Dealers are firms or organizations to whom the RBI delegates its powers to deal with the foreign exchange transactions.

Hence, options (b), (c), (d) and (e) are incorrect.

38. Answer : (c)

Reason : Sinking Fund Factor = $\frac{i}{(1+i)^n - 1} = \frac{1}{\text{FVIFA}}$. Hence option (c) is correct.

Capital recovery factor = $\frac{i(1+i)^n}{(1+i)^n - 1}$. Therefore capital recovery factor is the inverse of

Present value interest factor for annuity.

Future value interest factor = $(1+i)^n$.

Present value interest factor for annuity = $\frac{(1+i)^n - 1}{(1+i)^n \times i}$

Present value interest factor = $\frac{1}{(1+i)^n}$, i.e present value interest factor is the inverse of the

Future value interest factor.

39. Answer : (b)

Reason : Certificate of Deposits are issued by banks. It is not certificate of deposits but commercial papers that are unsecured promissory notes issued by well known companies that are financially strong and carry a high credit rating. Hence (b) is the answer. CDs are issued by banks in form of usance promissory notes at a discount to face value. Hence option (a) is correct. CDs are freely transferable by endorsement and delivery. Hence option (c) is correct. CDs are considered as virtually riskless instruments as the default risk is almost nil. Hence option (d) is correct. There is no ceiling on the amount that can be raised by CDs. Hence option (e) is correct.

40. Answer : (e)

Reason : When the required rate of return is less than the coupon rate, the premium on the bond will decline as the maturity approaches. It reaches the par value at maturity.

Therefore in the above question, $X > Y > Z$ and Z will be equal to the par value i.e. Rs 1,000.

Hence, options (c) and (d) are correct; Options (a) and (b) are wrong.

Therefore option (e) is the answer.

Section B : Problems

41. Answer : (a)

$$\begin{aligned}\text{Reason : Dividend yield} &= \frac{\text{Dividend per share}}{\text{Market price per Share}} \\ &= \frac{\text{Net Income} \times \text{Payout ratio}}{\text{No. of shares}} \times \frac{1}{\text{MP}} \\ &= \frac{50,000 \times 0.4}{10,000} \times \frac{1}{50} = 0.04 = 4\%\end{aligned}$$

42. Answer : (e)

Reason : Change in EBIT with change in sales is reflected by DOL, change in EPS with change in EBIT is measured by DFL and change in EPS with change in sales is measured by DTL.

$$\text{DOL} = \frac{\text{Contribution}}{\text{EBIT}}$$

$$\text{Total assets turnover} = \frac{\text{Sales}}{\text{Total assets}} \text{ i.e. } 2 = \frac{\text{Sales}}{56,00,000}$$

Hence, sales = Rs. 1,12,00,000.

(in Rs.)

Sales	1,12,00,000
Less: Variable costs (60% of sales)	67,20,000
Contribution	44,80,000
Less fixed costs	24,00,000
Earnings Before Interest and Taxes	20,80,000

$$\text{Degree of Operating Leverage} = \frac{\text{Contribution}}{\text{EBIT}}$$

$$= \frac{44,80,000}{20,80,000} = 2.15$$

DOL=2.15 indicates that if the sales increase or decrease by 1%, then EBIT will increase or decrease by 2.15%.

Hence, (b) is correct and (d) is incorrect.

$$\text{DFL} = \frac{\text{EBIT}}{\text{EBIT} - I - \frac{P_d}{1-t}}$$

Where EBIT = 20,80,000

$$I = \frac{\text{EBIT}}{3.2}, \text{ given by interest coverage ratio of 3.2 and } P_d \text{ is nil}$$

$$\text{DFL} = \frac{20,80,000}{20,80,000 - 6,50,000} = \frac{20,80,000}{14,30,000} = 1.45$$

DFL of 1.45 indicates if EBIT increase/decrease by 1%, EPS will increase/decrease by 1.45% Hence, (c) is incorrect.

$$\text{DTL} = \text{DOL} \times \text{DFL}$$

$$= 2.15 \times 1.45 = 3.12$$

i.e., if sales increase or decrease by 1%, EPS will increase or decrease by 3.12%. Hence (a) is correct and (e) is the answer.

43. Answer : (b)

Reason : Risk premium = $\beta(R_m - R_f)$

Prob.	k_A	k_m	$(k_A - \bar{k}_A)$	$(k_m - \bar{k}_m)$	$(k_m - \bar{k}_m)$ $(k_A - \bar{k}_A)$	$(k_m - \bar{k}_m)$ $(k_A - \bar{k}_A) \cdot P$
0.30	7	9	-3.2	0.25	-0.8	-0.24
0.35	8	5	-2.2	-3.75	8.25	2.8875
0.15	14	10	3.8	1.25	4.75	0.7125
0.20	16	14	5.8	5.25	30.45	6.09
	$\bar{k}_A = \sum k_A P$ = 10.20	$\bar{k}_m = \sum k_m P$ = 8.75				9.45

$$\hat{a}_A = \frac{\text{Cov}(k_A, k_m)}{\text{Var}(k_m)} = \frac{\sum P \cdot (k_A - \bar{k}_A)(k_m - \bar{k}_m)}{\sum P(k_m - \bar{k}_m)^2} = \frac{9.45}{10.6875} = 0.884$$

Risk premium = $0.884(8.75 - 6) = 2.43\%$.

Hence, option (b) is the correct choice.

44. Answer : (b)

Reason : At the end of 6 years, the future value of the amount that Ashish deposits each year for a period of 6 years, should be equal to the present value of the payments that he has to make under the loan agreement in the 7th, 8th, 9th and 10th years.

The discounted value of the payments to be made at the end of 7th, 8th, 9th and 10th years, as at the end of the 6th year =

$$\frac{3}{1.09} + \frac{4}{(1.09)^2} + \frac{2}{(1.09)^3} + \frac{1}{(1.09)^4} = \text{Rs. } 8.371 \text{ lakh}$$

Future value of the deposits made at the end of every year, for a period of 6 years =

X. $FVIFA_{(9\%, 6 \text{ years})}$ (where X is the amount to be invested at the end of every period till 6 years).

X. $FVIFA_{(9\%, 6 \text{ years})} = \text{Rs. } 8.371 \text{ lakh}$

$$X = \frac{8.371 \text{ lakh}}{FVIFA_{(9\%, 6 \text{ years})}} = \frac{8.371 \text{ lakh}}{7.523} = \text{Rs. } 1.1127 \text{ lakh i.e. Rs. } 1,11,270.$$

Hence Ashish has to deposit Rs. 1,11,270 at the end of every period for 6 years so as to be able to make the payments under the loan agreement.

45. Answer : (c)

Reason :

	2002 (in Rs.)	2003 (in Rs.)	Increase in Working capital (in Rs.)	Decrease in working capital (in Rs.)
Current Assets:				
Stock	2,20,000	2,90,000	70,000	--
Sundry Debtors	2,45,000	2,65,000	20,000	--
Cash in hand	60,000	85,000	25,000	--
Prepaid expenses	45,000	42,000	--	3,000
Current Liabilities:				
Sundry creditors	1,90,000	2,82,000	--	92,000
Bills Payable	1,20,000	1,30,000	--	10,000
			1,15,000	1,05,000
Net Increase in Working Capital			1,15,000	1,15,000

Hence (c) is the answer.

Alternative solution:

$$\text{Net working capital (2002)} = 2,20,000 + 2,45,000 - 1,90,000 - 1,20,000 + 60,000 + 45,000 \\ = \text{Rs.} 2,60,000$$

$$\text{Net working capital (2003)} = 2,90,000 + 2,65,000 - 2,82,000 - 1,30,000 + 85,000 + 42,000 \\ = \text{Rs.} 2,70,000$$

Therefore, change in working capital is increase of Rs.10,000

46. Answer : (e)

$$\text{Reason : Return on debenture} = \frac{\text{Coupon payment} + \text{Appreciation in the price}}{\text{Purchase Price at the beginning of the year}}$$

$$\text{i.e. } 0.20 = \frac{\text{Coupon payment} + (2000 - 1800)}{1800}$$

$$\text{Hence coupon payment} = 1800 \times 0.2 - 200 = \text{Rs. } 160.$$

Hence, (e) is the answer.

47. Answer : (d)

$$\text{Reason : Quick ratio} = \frac{\text{Current assets other than inventories}}{\text{Current liabilities}} = \frac{3+5}{3.2} = 2.5.$$

Hence, option (d) is the correct choice.

48. Answer : (b)

$$\text{Reason : Average collection period} = \frac{\text{Average accounts receivable}}{\text{Average daily sales}}$$

$$\text{Hence average daily sales} = \text{Average accounts receivable} / \text{Average collection period} \\ = 37000/45.$$

$$\text{Hence annual sales} = 360 \times 37000/45 = \text{Rs. } 2,96,000.$$

49. Answer : (c)

Reason : According to Du-Pont analysis

$$\text{Return On Equity (ROE)} = \text{Return on assets} \times \text{Equity multiplier}$$

$$\text{Where, Equity Multiplier} = \frac{1}{1 - \text{Debt to assets ratio}} = \frac{1}{1 - 1/3} = 3/2.$$

$$\text{Hence, Return On Equity} = 0.10 \times 3/2 = 0.15 \text{ or } 15\%.$$

50. Answer : (c)

$$\text{Reason : The yield on a T-bill, (k)} = \frac{F - P}{P} \times \frac{365}{d}$$

Where d is the maturity period

F is the face value and P is the price

$$0.1671 = \frac{100 - 96}{96} \times \frac{365}{d}$$

$$\text{Hence } d = 91.01 \text{ days. i.e. approximately 91 days.}$$

51. Answer : (c)

$$\text{Reason : Amount that Ashish should invest} = \text{Rs } 2,000 \times \text{PVIFA}_{(9\%, 6 \text{ years})} \times \text{PVIF}_{(9\%, 2 \text{ years})} \\ = 2,000 \times 4.486 \times 0.842 = \text{Rs. } 7,554.42$$

52. Answer : (a)

$$\text{Reason : Capitalization rate} = \frac{\text{Earning Per Share}}{\text{Market Price of the share}}$$

Earning Per Share = $(2,40,000 - 30,000) / 30,000 = \text{Rs. } 7.$

Hence, capitalization rate = $7/100 = 7\%.$

53. Answer : (b)

Reason : The maximum sales growth rate that can be financed without resorting to external financing

can be computed by equating $\frac{A}{S} - \frac{L}{S} - \frac{m(1+g)(1-d)}{g}$ to zero.

$$\text{i.e. } \frac{A}{S} - \frac{L}{S} - \frac{m(1+g)(1-d)}{g} = 0.$$

$$0.6 - 0.15 - \frac{0.06(1+g)(1-0.40)}{g} = 0$$

$$0.45 = 0.036 \frac{(1+g)}{g}$$

$$12.5g = 1+g$$

$$\text{Hence, } g = 1/11.5 = 8.7\%.$$

Alternative solution:

$$\text{EFR} = 0$$

$$\frac{A}{S} \Delta S - \frac{L}{S} \Delta S - mS_1(1-d) = 0$$

$$\frac{A}{S} \Delta S - \frac{L}{S} \Delta S - m(S + \Delta S)(1-d) = 0$$

$$0.6 \Delta S - 0.15 \Delta S - 0.06 \times 0.6 (S + \Delta S) = 0$$

$$0.6 \Delta S - 0.15 \Delta S - 0.036S - 0.036\Delta S = 0$$

$$0.414\Delta S = 0.036S$$

$$\frac{\Delta S}{S} = g = 8.7\%$$

54. Answer : (c)

$$\text{Reason : } k_e = \frac{D_1}{P_0} + g$$

Where D_1 is the next year dividends

P_0 is current market price

g is growth rate in dividends

$$k_e = \frac{4(1.06)}{50} + 0.06 = 14.48\%$$

55. Answer : (d)

$$\text{Reason : } \text{YTM} = \frac{I + \frac{(F-P)}{n}}{\frac{(F+P)}{2}} \quad 0.164 = \frac{170 + \frac{(1200-1114)}{n}}{\frac{(1200+1114)}{2}}$$

$$\text{Solving we get } n = 4.35 \text{ years}$$

$$= 4.4 \text{ years}$$

56. Answer : (a)

$$\text{Reason : Expected rate of return} = \frac{D_0(1+g)}{P_0} + g$$

At equilibrium, the required rate of return is equal to the expected rate of return.

$$\text{Hence, } 0.10 = \frac{3(1+0.05)}{P_0} + 0.05$$

$$P_0 = \text{Rs. } 63.$$

Hence, the price of the security should increase by Rs. 23 to be at equilibrium.

57. Answer : (d)

Reason : The value of the bond is computed as:

$$V_0 = I (PVIFA_{k\%,n}) + F (PVIF_{k\%,n})$$

Where I is the annual interest payment and F is the redemption value.

$$\begin{aligned} V_0 &= 90 \times PVIFA_{(8\%, 5 \text{ years})} + 1,100 PVIF_{(8\%, 5 \text{ years})} \\ &= 90 \times 3.993 + 1,100 \times 0.681 = \text{Rs. } 1,108.47. \end{aligned}$$

Hence, option (d) is correct.

58. Answer : (b)

Reason : The point at which DTL is undefined is called the overall break-even point. At this point the quantity produced can be computed as:

$$Q = \frac{F + I + \frac{D_p}{(1-T)}}{(S-V)},$$

Where, F is the fixed expenses

I is the interest expense

D_p is the preference dividend

T is the corporate tax rate

S is the selling price per unit and V is the variable cost per unit

$$\text{Hence } Q = \frac{6,00,000 + 65,000 + \frac{30,000}{(1-0.40)}}{(900 - 400)} = 1,430 \text{ units.}$$

59. Answer : (c)

Reason : When receivable worth Rs. 10,000 are realized then cash will increase by 10,000 and receivables worth Rs. 10,000 would decrease so there will not be any affect. Similarly when inventory worth Rs.30,000 is bought on credit, both current assets and current liabilities will increase by Rs.30,000 such that there will not be any impact on the net working capital.

60. Answer : (d)

$$\text{Reason : Earning Power} = \frac{\text{EBIT}}{\text{Average Total Assets}}$$

Earnings After Tax = Rs. 9.0 lakhs.

$$\text{Therefore, Earnings Before Tax} = \frac{9}{(1-0.40)} = \text{Rs. } 15 \text{ Lakhs}$$

EBIT = Earnings Before Tax + Interest = 15 + 8 = Rs. 23 lakhs.

$$\text{Net profit margin} = \frac{\text{Net profit}}{\text{Net sales}} \text{ i.e. Net sales} = \frac{\text{NP}}{\text{NPM}} = \frac{9,00,000}{0.05} = \text{Rs. } 180,00,000$$

$$\text{ATO ratio} = \frac{\text{Net sales}}{\text{Total assets}} \text{ i.e. TA} = \frac{180 \text{ lakhs}}{1.5} = \text{Rs. } 120 \text{ lakhs}$$

$$\text{Therefore, Earning power} = \frac{\text{EBIT}}{\text{Average Total Assets}} = \frac{23}{120} = 0.192 \text{ i.e. } 19.2\%.$$

Hence, the correct option is (d).

61. Answer : (d)

Reason : If 'k' is the nominal interest rate then the effective interest rate (say 'r') can be computed as:

$$r = \left(1 + \frac{k}{m}\right)^m - 1$$

where, m is the frequency of compounding per year.

$$\text{Hence, } 0.0848 = \left(1 + \frac{k}{3}\right)^3 - 1$$

Hence, k = 8.25%.

Option (d) is the correct choice.

62. Answer : (a)

Reason : Debt Equity ratio = 5:4

$$\text{Therefore Equity} = \frac{4}{9} \times 36,00,000 = \text{Rs. } 16,00,000.$$

Computation of fixed assets:

It is given that ratio of owner's equity to fixed assets is 8:15.

$$\text{i.e. } \frac{16,00,000}{\text{Fixed Assets}} = \frac{8}{15}$$

$$\text{Therefore, fixed assets} = 16,00,000 \times \frac{15}{8} = \text{Rs. } 30,00,000.$$

Hence Choice (a) is the correct option.

63. Answer : (b)

Reason : The expected rate of return as per the Capital Asset Pricing Model can be computed as:

$$k_x = R_f + \hat{a}_x (k_m - R_f)$$

where k_x is the required rate of return on the security,

k_m is the return on market portfolio,

R_f is the risk free rate of return

$$\hat{a}_x = \frac{\text{Cov}(k_x, k_m)}{\text{Var}(k_m)} = \frac{\tilde{n}_{xm} \sigma_x \sigma_m}{\text{Var}(k_m)} = \frac{0.45 \times \sqrt{10} \times \sqrt{3.33}}{10} = 0.26.$$

$$\text{Therefore, } k_x = R_f + \hat{a}_x (k_m - R_f) = 0.05 + 0.26 \times (0.10 - 0.05) = 6.3\%$$

Hence, the required rate of return as per CAPM = 6.3%.

64. Answer : (b)

$$\text{Reason : Liquidation value} = \frac{\text{Realised amount from Assets} - \text{Payment to creditors}}{\text{No. of shares}}$$

$$= \frac{25 - 10}{1.5} = \frac{15}{1.5} = \text{Rs. } 10$$

65. Answer : (e)

$$\text{Reason : At the financial break even point, } \text{EBIT} = I + \frac{D_p}{(1-t)}$$

$$\text{i.e. } I + \frac{D_p}{(1-t)} = \text{Rs } 2,10,000.$$

$$\text{DFL} = \frac{\text{EBIT}}{\text{EBIT} - I - \frac{D_p}{(1-T)}} = \frac{\text{EBIT}}{\text{EBIT} - (I + \frac{D_p}{(1-T)})} = \frac{7,50,000}{7,50,000 - 2,10,000} = 1.39.$$

Hence, option (e) is the correct choice.

66. Answer : (c)

Reason : $\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}} = \frac{31}{13}$ i.e. $\text{Current assets} = \frac{31}{13} \text{ Current liabilities}$

We know that working capital = Current assets – Current liabilities = Rs. 9,00,000

i.e. $\frac{31}{13} \text{ Current liabilities} - \text{Current liabilities} = 9,00,000$

$\text{Current liabilities} = 9,00,000 \times \frac{13}{18} = \text{Rs. } 6,50,000.$

$\text{Current assets} = \frac{31}{13} \text{ Current liabilities} = \frac{31}{13} \times 6,50,000 = \text{Rs. } 15,50,000.$

It is given that liquid ratio = $\frac{18}{13}$

i.e. $\frac{\text{Current assets} - \text{Inventories}}{\text{Current liabilities}} = \frac{18}{13}$

$\frac{15,50,000 - \text{Inventories}}{6,50,000} = \frac{18}{13}$

Therefore, Inventory = Rs. 6,50,000.

67. Answer : (d)

Reason : New sales = 25 (1.3) = Rs.32.5 lakhs

$\text{NPM} = \frac{4}{25} = 16\%$,

New PAT = 32.5 x 0.16 = Rs.5.2 lakhs

Dividends = 30% of 5.2 = Rs.1.56 lakhs

Retained earnings = Rs.3.64 lakhs

Increase in borrowings = 3.64 x 1.75 = Rs.6.37 lakhs

68. Answer : (c)

Reason : Let new short-term borrowing be denoted by x.

Current ratio should not be less than 1.2 i.e.

$\frac{\text{Current Assets}}{\text{Short-term bank borrowing} + \text{Current Liabilities}} \geq 1.2$

i.e. $\frac{441}{x + 105 + 220.50} \geq 1.2$ (Note: Current assets here are computed as 350 (1+26%) = Rs. 441 lakhs

and Spontaneous liabilities are computed as: 175 x (1+ 26%) = Rs. 220.50 lakhs)

i.e. $441 \geq 1.2 (x + 105 + 220.5)$

$x \leq \text{Rs. } 42 \text{ lakhs}$

i.e. $x \leq \text{Rs. } 42 \text{ lakhs}$

Hence, maximum short-term bank borrowing that can be made is Rs. 42 lakhs.

Therefore minimum equity to be raised = External funds requirement – New short-term bank borrowing

= 117.14 lakhs – 42 lakhs = Rs. 75.14 lakhs.

69. Answer : (e)

Reason : According to Rule 69, amount will be doubled in $\left(0.35 + \frac{69}{i}\right)$ yrs

In the given case, the amount will be doubled in 7 years 9 months i.e. 7.75 years

$0.35 + \frac{69}{i} = 7.75$, $i = 9.32\%$

Answer : (c)

Reason :

$$= \frac{10}{1.12} + \frac{2 \times 60}{1.12}$$

$$\frac{\text{PAT} + \text{Non - cash charges} + \text{Interest}}{\text{I} + \text{Repayment of TL}}$$
$$= \frac{14.98 + 6.5 + 9.2}{9.2 + 7.5} = \frac{30.68}{16.7} = 1.84$$

72. Answer : (b)

Reason : Cost of goods sold = Rs. 39,00,000.

Gross profit margin is given to be 25%. In other words gross profit is 25% of sales.

Let Sales be x.

Therefore, Cost of goods sold + 0.25 x = x

$$39,00,000 + 0.25x = x$$

Hence x (i.e. Sales) = Rs. 52,00,000.

Average receivables turnover ratio is given to be 52:15

$$\text{i.e. } \frac{\text{Net credit sales}}{\text{Average accounts receivables}} = \frac{52}{15} \quad (\text{assume that the entire sales are on a credit basis})$$

$$\frac{52,00,000}{\text{Average accounts receivables}} = \frac{52}{15}$$

Therefore, Debtors (or average account receivables) = Rs. 15,00,000.

Cash and Bank = Quick assets – debtors = 18,00,000 – 15,00,000

= Rs.3,00,000.