

Question Paper

Financial Management – I (141) : July 2005

- Answer all questions.
- Marks are indicated against each question.

1. Which of the following will not result in inflow or outflow of funds with regard to an organization?

< Answer
≥

- | | |
|-------------------------------------|-------------------------------|
| (a) Bonus issue of equity shares | (b) Issue of debentures |
| (c) Purchase of machinery on credit | (d) Purchase of raw materials |
| (e) Exercise of warrants. | |

(1 mark)

2. Which of the following statements is **not true**?

< Answer
≥

- (a) Each level of EBIT has a distinct DFL
- (b) DFL is undefined at financial breakeven point
- (c) DFL will be negative when the EBIT level goes below the financial breakeven point
- (d) DFL will be positive for all values of EBIT that are above the financial breakeven point
- (e) DTL is equal to one below the financial breakeven point.

(1 mark)

3. Stock X has a beta of 0.6, while Stock Y has a beta of 1.4. Which of the following statements is correct?

< Answer
≥

- (a) Stock Y must have a higher expected return and a higher standard deviation than Stock X
- (b) A portfolio consisting of Rs.50,000 invested in Stock X and Rs.50,000 invested in Stock Y will have a required return that exceeds that of the overall market
- (c) If the market risk premium decreases but expected inflation is unchanged, the required return on both stocks will decrease but the decrease will be greater for Stock Y
- (d) If expected inflation increases but the market risk premium is unchanged, the required return on both stocks will decrease by the same amount
- (e) If expected inflation decreases but the market risk premium is unchanged, the required return on both stocks will decrease but the decrease will be greater for Stock X.

(1 mark)

4. Which of the following statements is **correct**?

< Answer
≥

- (a) Risk refers to the chance that some unfavorable event will occur, and a probability distribution is completely described by listing the likelihood of unfavorable events
- (b) Portfolio diversification reduces the variability of returns on an individual stock
- (c) When company-specific risk has been diversified the inherent risk that remains is market risk, which is constant for all securities in the market.
- (d) A stock with a beta of -1.0 has zero market risk
- (e) The slope and intercept of security market line cannot be controlled by the financial manager.

(1 mark)

5. Security A offers an expected return of 14% with a standard deviation of 8%. Security B offers an expected return of 11% with a standard deviation of 6%. If you wish to construct a portfolio with a 12.8% expected return, what percentage of the portfolio will consist of security A?

< Answer
≥

- | | | | |
|----------|---------|---------|---------|
| (a) 55% | (b) 60% | (c) 65% | (d) 40% |
| (e) 45%. | | | |

(1 mark)

6. As the number of securities in a portfolio increases,

< Answer
≥

- (a) The portfolio variance increases
- (b) The portfolio variance depends more on average covariance

- (c) The portfolio variance depends more on average expected value
- (d) The portfolio variance depends more on average variance
- (e) The portfolio variance does not change.

(1 mark)

7. If you desire maximum diversification, you should search for stocks with a correlation coefficient equal to < Answer
≥

- (a) +1.0
- (b) 0.0
- (c) -1.0
- (d) +0.5
- (e) -0.5.

(1 mark)

8. An increase in the expected future inflation rate has < Answer
≥

- (a) The effect of increasing the slope of the security market line
- (b) The effect of shifting the security market line upward by the amount of the expected increase in inflation
- (c) The effect of decreasing the slope of the security market line
- (d) The effect of shifting the security market line to the right
- (e) No effect in the security market line.

(1 mark)

9. Which of the following is **true** regarding the earning power of two companies? < Answer
≥

- (a) Pre-tax earnings being same, higher the tax rate, lower the earning power
- (b) Debt-equity ratio and pre-tax earnings being same, higher the interest rate, lower the earning power
- (c) Total assets being same, higher the debt-equity ratio, higher the earning power
- (d) Pre-tax earnings being the same, greater the total assets, higher the earning power
- (e) Sales and pre-tax earning being the same, greater the total assets turnover ratio, higher the earning power.

(1 mark)

10. The risk remaining after extensive diversification is primarily < Answer
≥

- (a) Unsystematic risk
- (b) Systematic risk
- (c) Financial risk
- (d) Credit Risk
- (e) Default risk.

(1 mark)

11. The amount of risk reduction achieved by diversification does **not** depend on which of the following factors? < Answer
≥

- I. Degree of correlation of the stocks under consideration.
- II. Number of stocks involved in the portfolio.
- III. The market return.
- IV. The covariance between the return on stocks and the market return.
- (a) Only (II) above
- (b) Only (III) above
- (c) Only (IV) above
- (d) Both (III) and (IV) above
- (e) (I), (III) and (IV) above.

(1 mark)

12. The security market line < Answer
≥

- (a) Is defined as the slope of a line relating an individual security's return to the returns of other securities in that firm's primary industry
- (b) Provides a picture of the risk-return tradeoff required by diversified investors considering various risky assets
- (c) Has its slope as the beta of the security
- (d) Is the regression between return on a security and return on the market
- (e) Measures the volatility of a security's return.

(1 mark)

13. Security A's expected return is 10 percent while the expected return of security B is 14 percent. The standard deviation of A's returns is 5 percent and it is 9 percent for B. An investor plans to invest equal amounts in A and B. Which of the following statements is **true** about this portfolio consisting of security A and security B?

< Answer
≥

- (a) The risk of the portfolio is equal to 7 percent.
- (b) The lower the correlation of returns between the two stocks, the higher the portfolio's risk.
- (c) The risk of the portfolio is primarily dependent on the utility function of the investor
- (d) The higher the correlation of returns between the two stocks the higher the portfolio's risk.
- (e) The risk of the portfolio will be more than 9% ,if the correlation coefficient is negative.

(1 mark)

14. Which of the following bonds will have the greatest percentage increase in value if interest rates decrease by 1 percent?

< Answer
≥

- (a) 20-year, zero coupon bond
- (b) 10-year, zero coupon bond
- (c) 20-year, 10 percent coupon bond
- (d) 20-year, 5 percent coupon bond
- (e) 10-year, 5 percent coupon bond.

(1 mark)

15. Dinesh bought a house that costs Rs.10,00,000. His loan for Rs.10,00,000 has an effective interest rate of 6 percent p.a. compounded monthly with monthly payments over 20 years. How much amount of principal does he still owe on his loan after two installment payments?

< Answer
≥

- (a) Rs.9,00,000
- (b) Rs.9,98,000
- (c) Rs.9,95,661
- (d) Rs.9,94,471(e)
- Rs.9,85,671.

(1 mark)

16. Assume that the risk free-rate is 7% and the market risk premium is 8%. After careful analysis, you believe that Indian Media Group common stock will give return of 17% next year. The beta for the stock is 1.5. You should

< Answer
≥

- (a) Buy it because it earns more than 7%
- (b) Buy it because it earns more than 8%
- (c) Buy it because it earns more than 15%
- (d) Not buy it because it earns less than 18%
- (e) Not buy it because it earns less than 19%.

(1 mark)

17. Which of the following statements is **correct**?

< Answer
≥

- (a) If investors were to become more risk averse, the new security market line would have a flatter slope.
- (b) The slope of the security market line is determined by beta
- (c) Two securities that have the same unsystematic risk will also have the same beta
- (d) If we were to observe a downward shift in the required returns of all stocks, that can be a signal that investors believe that the economy will experience deflation.
- (e) It is impossible for the market risk of a single stock to be less than the market risk of a well-diversified portfolio.

(1 mark)

18. Which of the following statements is **correct**?

< Answer
≥

- (a) The narrower the probability distribution of expected returns, is the more likely the outcome will be close to the expected value
- (b) The standard deviation is a statistical measure that allows investors to measure the degree of risk borne per unit of expected return
- (c) Unsystematic risk is the risk an investor faces from holding only one asset and it can not be reduced through diversification
- (d) If investors are risk averse, they would not be willing to pursue an investment with excessive risk, regardless of the expected return
- (e) If the stocks in a portfolio are perfectly positively correlated, the variance of the portfolio is zero irrespective of the weightage of the stocks.

(1 mark)

19. Which of the following statements is/are **true** regarding capital structure ratios?

< Answer
≥

- I. They are used to measure the degree of risk resulting from debt financing.
- II. They are used to identify prospective sources of funds.
- III. They are used to forecast borrowing prospects of the firm.

- (a) Only (I) above
- (b) Only (II) above
- (c) Both (I) and (III) above
- (d) Both (II) and (III) above
- (e) All (I), (II) and (III) above.

(1 mark)

20. A financial analyst for Kroger Industries is comparing the results of this year with those of last year. In doing so, it is observed that while Kroger's operating income decreased, its net income and operating cash flow actually increased. All else equal, which of the following events could have been responsible for this occurrence?

< Answer
≥

- (a) The company's interest expense decreased significantly
- (b) The company's accruals decreased greatly
- (c) The company's tax rate increased
- (d) The company's depreciation expense decreased severely
- (e) The company's dividend decreased.

(1 mark)

21. Which of the following is likely to increase the external funds required in a given year?

< Answer
≥

- (a) The company reduces its dividend payout ratio
- (b) The company's profit margin increases
- (c) The company decides to reduce its reliance on accounts payable as a form of financing
- (d) The company is operating well below full capacity
- (e) The company can increase its accrued wages.

(1 mark)

22. A firm has a market to book value ratio that is equivalent to the industry average and an ROE that is less than the industry average. This implies that

< Answer
≥

- (a) The firm is more profitable than other firms in the industry
- (b) The firm is more likely to avoid insolvency in the short run than other firms in the industry
- (c) The firm has a higher P/E ratio than other firms in the industry
- (d) The firm is utilizing its assets more efficiently than other firms in the industry
- (e) The firm has more liquidity than other firms in the industry.

(1 mark)

23. If a firm's ratio of total liabilities to total assets is higher than the industry average while the firm's stockholders' equity and long term debt-equity ratio are lower than the industry average, the most likely assumption is that the firm

< Answer
≥

- (a) Has more current assets than the industry average
- (b) Has more leased assets than the industry average
- (c) Will be more profitable than the industry average
- (d) Has more current liabilities than the industry average
- (e) Has more fixed assets than the industry average.

(1 mark)

24. Compared with a company that capitalizes all interest costs, a company that expenses interest will report

< Answer
≥

- (a) Higher interest coverage ratio and lower cash flows from operations
- (b) Lower interest coverage ratio and lower net income
- (c) Higher interest coverage ratio and higher cash flows from operations
- (d) Lower interest coverage ratio and higher net income
- (e) Higher Earnings Before Interest and Tax and higher net income.

(1 mark)

25. Which of the following statements is/are **true** regarding financial leverage? < Answer
≥
- Other things remaining same, if financial leverage increases, market price of the equity shares as well as value of the firm decreases.
 - Favorable or positive financial leverage occurs when the firm earns more on the assets than the fixed financing cost paid.
 - If financial leverage is more than 1, a proportionate change in EBIT results in more than a proportionate change in earning per share.
- (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.
- (1 mark)
26. Recently the Bevel Furniture Company has been facing problems. As a result, its financial situation has deteriorated. Bevel approached the Wilmington Trust Company for a loan, but the loan officer insisted that the current ratio (currently 0.7) be improved to at least close to 1.0 before the bank would even consider making the loan. Which of the following actions would do the most to improve the ratio in the short run and would likely be the least costly to Bevel? < Answer
≥
- Using some cash to pay off some long-term and short-term liabilities.
 - Purchasing some additional raw materials on credit thereby creating an additional accounts payable
 - Paying off some notes payable with cash to reduce the firm's debt.
 - Selling some fixed assets for cash
 - Collecting some accounts receivable.
- (1 mark)
27. Which of the following will decrease with an increase in the interest rate? < Answer
≥
- Future Value Interest Factor
 - Future Value Interest Factor For Annuity
 - Capital Recovery Factor
 - Present Value Interest Factor for a perpetual annuity
 - Inverse of Present Value Interest Factor For Annuity.
- (1 mark)
28. Which of the following is **not** a feature of a commercial paper (CP)? < Answer
≥
- It is an unsecured instrument
 - It is issued in multiples of Rs.5 lakhs
 - Buy-back facilities are not available for CPs
 - It is negotiable by endorsement and delivery
 - The maturity varies from 15 days to a year.
- (1 mark)
29. Which of the following is sterling denominated foreign bonds raised in the United Kingdom domestic securities market? < Answer
≥
- Samurai Bonds
 - Yankee Bonds
 - Bulldog Bonds
 - Shibosai Bonds
 - Matador Bonds.
- (1 mark)
30. Which of the following is **not true** with respect to Certificates of Deposit (CDs)? < Answer
≥
- CDs are issued at a discount to face value
 - CDs are issued by scheduled banks other than regional rural bank and scheduled co-operative banks
 - 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.
- (1 mark)
31. An investor places an order with a broker in the stock exchange to sell 100 shares of X Ltd at a fixed price of Rs.150 per share including brokerage charges of 1%. Such an order is referred to as < Answer
≥

- (a) Limited discretionary order (b) Best rate order ≥
 (c) Immediate order (d) Limit order (e) Stop loss order.
 (1 mark)

32. Which of the following is a diversifiable risk for an investor who wants to invest in the shares of Sahana Arts Ltd., a film producing company in India? < Answer ≥

- (a) Major change in the government policy on the entertainment industry
 (b) Possibility of a war threat from the neighboring country
 (c) The fiscal deficit exceeding well beyond the budgeted level
 (d) Possibility of low rainfall thereby leading to widespread drought across India
 (e) Deflation of the economy.

(1 mark)

33. If the yield to maturity (YTM) of bond X is greater than the yield to maturity of bond Y, with the same coupon rate and maturity, which of the following is/are true? < Answer ≥

- I. The price of bond X will change more than the price of Bond Y for a given change in YTM
 II. The market price of bond Y is more than that of X
 III. The current yield of both the bonds would be same

- (a) Only (I) above (b) Both (I) and (II) above
 (c) Both (I) and (III) above (d) Both (II) and (III) above
 (e) All (I), (II) and (III) above.

(1 mark)

34. Which of the following statements is/are **true**? < Answer ≥

- I. Current yield is equal to the coupon rate, if the market price is equal to the face value of the bond.
 II. When the required rate of return (k_d) is greater than the coupon rate, the value of the bond is less than its par value.
 III. Current yield is equal to the interest paid divided by the face value of the bond.

- (a) Only (I) above (b) Both (I) and (II) above
 (c) Both (I) and (III) above (d) Both (II) and (III) above
 (e) All (I), (II) and (III) above.

(1 mark)

35. If the expected P/E ratio exceeds the stock's current P/E, then which of the following statements is/are true? < Answer ≥

- 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.

(1 mark)

36. Which of the following is **true** regarding the going concern value of a business? < Answer ≥

- (a) It is the amount that is required to be spent, if it were to replace its existing assets in the current condition
 (b) It is generally the minimum value that a company might accept, if it wishes to sell its business
 (c) It is the price that is prevailing in the market at which the assets are being sold or bought
 (d) It is always higher than the liquidation value, the difference accounting for the usefulness of assets and value of intangibles
 (e) It is similar to the book value of the assets.

(1 mark)

37. Which of the following is/are **not true** regarding the dividend ratios? < Answer ≥

- I. Dividend yield is always expressed as a percentage of dividends to the earnings of the company.

- II. Dividend yield is calculated as dividend pay-out ratio divided by the P/E ratio.
 III. It is desired to invest in a company having a high dividend yield irrespective of its profitability and liquidity.

- (a) Only (II) above (b) Only (III) above
 (c) Both (I) and (II) above (d) Both (I) and (III) above
 (e) Both (II) and (III) above.

(1 mark)

< Answer
 ≥

38. A warrant attached to a bond

- (a) Always increases the riskiness of the common equity
 (b) Cannot be detached and traded
 (c) Is preferred by investors to minimize the risk
 (d) Gives the holder the rights of an equity share holder
 (e) Gives the holder the right to subscribe to the bonds of the company.

(1 mark)

< Answer
 ≥

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

- I. Other things being equal, as the expected growth rate in dividend increases, the expected return depends more on the capital gain yields and less on the dividend yield.
 II. Other things being equal, the price-earning ratio decreases as the expected growth rate in dividend increases.
 III. High dividend yield and low price-earning ratio imply limited growth prospects.

- (a) Only (I) above (b) Only (III) above
 (c) Both (I) and (III) above (d) Both (II) and (III) above
 (e) Both (I) and (II) above.

(1 mark)

< Answer
 ≥

40. Which of the following statements is **true**?

- (a) The risk that cannot be eliminated through diversification is called specific risk
 (b) When the number of securities in the portfolio decreases, the portfolio variance approaches the co-variance of the securities in the portfolio
 (c) Magnitude of portfolio risk does not depend on the correlation between the securities
 (d) Unsystematic risk can be eliminated through diversification
 (e) When two securities are perfectly positively correlated, the portfolio risk becomes zero.

(1 mark)

< Answer
 ≥

41. Mr. Shyam plans to send his son abroad for higher education 15 years hence. Presently the expenditure on the same is Rs.5,00,000 and this is growing at a rate of 3 percent per annum. If the rate of interest is 8 percent per annum, how much should Mr. Shyam invest at the end of each year for the next 15 years in order to finance the expenditure on his son's higher education after 15 years?

- (a) Rs.28,690 (b) Rs.76,187 (c) Rs.7,34,426 (d) Rs.8,50,755 (e) Rs.9, 50,825.

(2 marks)

< Answer
 ≥

42. Mr. Rajsinha is 70 years old and he is expecting that he will live for another ten years. His total savings are Rs.2,00,000, 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.77,100 (b) Rs.40,000 (c) Rs.37,100 (d) Rs.32,546 (e) Rs.12,550.

(2 marks)

< Answer
 ≥

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.5,88,224 (c) Rs.6,31,650 (d) Rs.9,63,045 (e) Rs.15,94,695.

(3 marks)

< Answer
≥

44. Hyderabad Finance Ltd. offers a deposit scheme where the investor is required to deposit Rs.100 at the end of every month for a period of 4 years 2 months in order to get an amount of Rs.7500 at the end of 5 years. What is the effective rate of interest?

- (a) 11.30 percent (b) 12.30 percent
(c) 13.30 percent (d) 14.30 percent (e) 15.30 percent.

(3 marks)

< Answer
≥

45. Mr. Sadhu plans to buy a house for a price of Rs.5 lakh. State Bank of India offers loan at an effective rate of 9 percent per annum with quarterly compounded for 80 percent of the purchase price of the house. How much will be the equated monthly installments, if Mr.Sadhu plans to repay the loan with interest in the next ten years?

- (a) Rs.5041 (b) Rs.5142 (c) Rs.5242 (d) Rs.5342 (e) Rs.5442.

(2 marks)

< Answer
≥

46. The correlation coefficient between returns on stock of M/s. X Ltd. and the market returns is 0.45. The variance of returns on M/s. X Ltd. is $3.33(\%)^2$ and that for the market returns is $10(\%)^2$. 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 marks)

< Answer
≥

47. If the beta of a stock is 0.8 and the covariance of returns of the stock and market is $225(\%)^2$, then the standard deviation of the returns on the market is

- (a) 18.75% (b) 16.77% (c) 14.19% (d) 13.42% (e) 12.00%.

(1 mark)

< Answer
≥

48. India Investment Fund holds the following portfolio:

Stock	Investment (Rs. crore)	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 crore 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%.

(2 marks)

< Answer
≥

49. The shares of SMS Ltd. are presently trading at a price of Rs.10 per share. The expected dividend by the end of the year is Rs.1.00 per share while the appreciations of the share price of SMS vis-à-vis the Market Index(presently at 3800) are projected by the analysts as follows:

Price (Rs.)	10	11	12
Market Index	4370	4750	5130
Probability	0.3	0.4	0.3

What is the beta value for the shares of SMS Ltd.?

- (a) 0.50 (b) 1.00 (c) 1.25 (d) 1.50
(e) 1.75.

(2 marks)

50. The coupon rate of bond X is greater than that of bond Y. The maturity and YTM of both the bonds are same. The YTM of the bonds are higher than their respective coupon rates. Which of the following is/are **true**? < Answer
≥

- (a) The percentage price change in bond X will be more than the percentage price change in Y for a change in YTM
- (b) The market price of bond Y is more than that of X
- (c) Bond Y will be trading at discount
- (d) Bond X will be trading above par
- (e) Bond Y will be trading above par.

(1 mark)

51. Consider the following data: < Answer
≥

Assets turnover ratio	=	1.15
Return on total assets	=	17%
Equity capital	=	Rs.15 lakh
Face value per share	=	Rs.10
Dividend paid	=	Rs.5.25 lakh
Equity multiplier	=	3.25
Assume nil retained earnings.		

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

- (a) 29.2%
- (b) 25.7%
- (c) 30%
- (d) 23.8%
- (e) 20.5%.

(3 marks)

52. 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 < Answer
≥

- (a) 1%
- (b) 2%
- (c) 3%
- (d) 4%
- (e) 5%.

(3 marks)

53. Quick Start Ltd. is expected to pay a dividend of Rs.1.05 next year and dividends are expected to continue their 7 percent annual growth rate. The SML has been estimated as follows: < Answer
≥

$$k_j = 0.08 + 0.064\beta_j$$

If Quick Start has a beta of 1.1, what would happen to its stock price, if inflation expectations went from the current 5 percent to 8 percent?

- (a) Decreases by Rs.8.14
- (b) Decreases by Rs.3.55
- (c) Increases by Rs.3.18
- (d) Increases by Rs.4.55
- (e) Stock price will not change.

(2 marks)

54. Richtex Ltd. has a current dividend of Rs.1.70 and the market value of its common stock is Rs.28. The expected market return is 13 percent and the risk-free rate is 6 percent. If Richtex stock is half as volatile as the market and the market is in equilibrium, what rate of growth is expected for Richtex's dividends assuming a constant growth valuation model is appropriate for Richtex? < Answer
≥

- (a) 4.93%
- (b) 3.23%
- (c) 5.24%
- (d) 6.37%
- (e) 5.56%

(2 marks)

55. AKA's stock is currently selling for Rs.11.44. This year the firm had earnings per share of Rs.2.80 and the current dividend is Rs.0.68. Earnings are expected to grow 7% a year in the foreseeable future. The risk-free rate is 6 percent and the expected market return is 14.2 percent. What will be the effect on the price of AKAs' stock, if systematic risk increases by 40 percent, all other factors < Answer
≥

remaining constant?

- (a) An increase of Rs.2.57 (b) A decrease of Rs.3.00
(c) A decrease of Rs.3.61 (d) An increase of Rs.2.12
(e) Cannot be determined.

(2 marks)

56. Dona has a portfolio of 8 securities, each with a market value of Rs.5,000. The current beta of the portfolio is 1.28 and the beta of the riskiest security is 1.75. Dona wishes to reduce her portfolio beta to 1.15 by selling the riskiest security and replacing it with another security with a lower beta. What must be the beta of the replacement security?

< Answer
≥

- (a) 1.46 (b) 1.21 (c) 0.91 (d) 0.71
(e) 0.52.

(1 mark)

57. The common stock of the Phoenix Company is currently selling for Rs.20 per share. Security analysts at Smith Blarney have assigned the following probability distribution to the price of (and rate of return on) Phoenix stock one year from now:

< Answer
≥

Price	Rate of Return	Probability
Rs.16	-20%	0.25
Rs.20	0%	0.30
Rs.24	+20%	0.25
Rs.28	+40%	0.20

Phoenix is not expected to pay any dividends during the coming year, and the expected rate of return is 8%. The standard deviation of possible rates of return on Phoenix stock is

- (a) 20.9% (b) 2.2% (c) 23.4% (d) 12.4%
(e) 45.6%.

(2 marks)

58. Suresh's father has promised to give him Rs.1,000 each year for the next three years. A bank deposit pays 5 percent p.a. compounded semi-annually. How much money will Suresh have at the end of three years, if he decides to invest in the bank? Assume the money (the Rs.1,000 from his father) will be received at the end of each year.

< Answer
≥

- (a) Rs.3,154 (b) Rs.2,859 (c) Rs.4,000 (d) Rs.2,723 (e) Rs.3,500.

(1 mark)

59. Valence Company's stock and the market had the following returns during the last three years and the same trend is expected to continue in the future:

< Answer
≥

Year	1	2	3
Market (%)	16	8	0
Valence stock (%)	13	9	4

The gilt edged securities are trading at 6 percent. If equilibrium exists and the expected return on the market is 12 percent, what is the expected return on Valence stock?

- (a) -2.25% (b) 9.37% (c) 8.45% (d) 4.76%
(e) 16.0%.

(2 marks)

60. Following is the data of Trupti Manufacturing Company: (Rs.)

< Answer
≥

Provision for contingencies	=	60,000
Short term working capital investment	=	60,00,000
Short term loans and advances (given)	=	10,00,000

The following changes have occurred during the year

Increase in provision for contingencies	=	10,000
Short term loans and advances (taken)	=	500,000
Decrease in short term working capital investment	=	30,00,000

After considering the above changes the net working capital of the firm is

- (a) Rs.9,30,000 (b) Rs.1,00,000 (c) Rs.34,30,000 (d) Rs.70,000 (e)
Rs.10,70,000.

(2 marks)

< Answer
≥

61. Current liabilities are Rs.20,000 and current assets are Rs.30,000. If debtors realized amount to Rs.6,000, raw materials purchased on credit amount to Rs.3,000 and Rs.6,000 worth of preference shares are converted into equity, the impact on the net working capital (NWC) would be

- (a) Decrease of Rs.3,000 in NWC (b) Increase of Rs.3,000 in NWC
(c) No change in NWC (d) Increase of Rs.9,000 in NWC
(e) Decrease of Rs.9,000 in NWC.

(1 mark)

< Answer
≥

62. 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 marks)

< Answer
≥

63. Consider the following information:

Expected return on market	15%	
Required rate of return as per CAPM		13.2%
Beta of Stock X	0.8	
Expected rate of return on stock X	15%	

Which of the following is/are true regarding stock X according to the Security Market Line (SML)?

- I. It is correctly priced as its return is equal to the market return.
II. It is a stock of below average risk as its beta is less than 1.
III. It is an over valued security as its expected rate of return is more than its required rate of return.
IV. It will lie below the SML as its beta is less than 1.
(a) Only (I) above (b) Only (II) above
(c) Both (II) and (IV) above (d) Both (II) and (III) above
(e) (II), (III) and (IV) above.

(2 marks)

< Answer
≥

64. During 2004, the Fillmore Company's sales were Rs.12.0 million. Its balance sheet at year end 2004 is shown below. Fillmore's 2005 sales are expected to be Rs.15 million and its 2006 sales are expected to be Rs.18 million. Earnings after tax in both years are expected to be 5.0% of sales and annual dividends of Rs.2,50,000 are expected to be paid in both the years 2005 and 2006. The company presently has excess plant and equipment capacity. As a result, assume that the net fixed asset figure on the balance sheet will remain constant for both the years 2005 and 2006. Assuming that the present ratios of assets (except net fixed assets) to sales and accounts payable to sales remain the same in the years 2005 and 2006.

Balance Sheet of Fillmore company as on March 31, 2004

(Rs. millions)

Assets		Liabilities	
Cash	0.2	Accounts Payable	0.6
Accounts Receivable	1.2	Bank borrowings	0.7
Inventory	2.0	Long-term debt	1.5
		Retained earnings	1.0
Net Fixed Assets	2.6	Stockholders' equity	2.2
Total	6.0	Total	6.0

The total amount of external financing required during the two year period from 2006 through 2007, are

- (a) Rs.7,50,000 (b) Rs.2,50,000 (c) Rs.10,00,000
(d) Rs.12,50,000 (e) Rs.17,50,000.

(2 marks)

65. Coats Corp. generates Rs.100 lakh in sales. Its variable costs equal 85 percent of sales and its fixed costs are Rs.5,00,000. The company estimates that its sales were to increase by 10 percent, its net income and EPS would increase by 17.5 percent. What is the company's interest expense?(Assume that the change in sales would have no effect on the company's tax rate.)

< Answer
≥

- (a) Rs.1,00,000 (b) Rs.1,05,874 (c) Rs.1,11,584 (d) Rs.1,42,857 (e) Rs.8,57,142.

(2 marks)

66. The growth rate of a firm is equal to 9 percent, return on assets is 12 percent; the debt ratio is 36 percent; and presently the stock is selling at Rs.38 in the market. What is the return on equity?

< Answer
≥

- (a) 14.05% (b) 18.75% (c) 12.0% (d) 3.0% (e) 13.5%.

(2 marks)

67. Internet Sale Inc. and Complingo Corp. both have assets of Rs.1,00,000 and a return on common equity equal to 17 percent. Internet Sale has twice as much debt and twice as many sales as Complingo Corp. has. Internet Sales' net income equals Rs.10,000 and its total assets turnover is equal to 3.5. What is Complingo Corps' profit margin?

< Answer
≥

- (a) 2.50% (b) 5.06% (c) 7.71% (d) 10.00% (e) 13.50%.

(2 marks)

68. Quick Launch Rocket Company, a satellite launching firm, expects its sales to increase by 50 percent in the coming year as a result of ISRO's recent problems with the space shuttle. The firm's current EPS is Rs.3.25. Its degree of operating leverage is 1.6, while its degree of financial leverage is 2.1. What is the firm's projected EPS for the coming year using the DTL approach?

< Answer
≥

- (a) Rs.3.25 (b) Rs.5.46 (c) Rs.10.92 (d) Rs.8.71 (e) Rs.19.63.

(2 marks)

69. Burger Corporation makes surveillance equipment for intelligence organizations. Its sales are Rs.7,50,00,000. Fixed costs, including research and development, are Rs.4,00,00,000, while variable costs amount to 30 percent of sales. Burger plans an expansion which will generate additional fixed costs of Rs.1,50,00,000, decrease variable costs to 25 percent of sales, and also permit sales to increase to Rs.10,00,00,000. What is Burger's degree of operating leverage at the new projected sales level?

< Answer
≥

- (a) 3.75 (b) 4.20 (c) 3.50 (d) 4.67
(e) 3.33.

(3 marks)

70. In order to buy a car worth Rs.5,00,000, you are planning to take loan of Rs.400,000 from a Commercial Bank. The loan is to be repaid along with interest in equated monthly installments of Rs.9,000 within a period of 5 years, payable at the end of every month. However, the margin money of Rs.100,000 is to be borrowed from a local money lender that is to be repaid at an interest rate of 20 percent by the end of the year. What is the implicit cost of your borrowed funds?

< Answer
≥

- (a) 12.42 percent (b) 12.92 percent
(c) 13.32 percent (d) 13.72 percent (e) 14.12 percent.

(2 marks)

Suggested Answers

Financial Management – I (141) : July 2005

1. Answer : (a) <
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Reason : In bonus issue of equity shares, the existing shareholders are rewarded with additional equity shares without any money on the basis of their proportionate shareholding. But in case of issue of debentures and exercise of warrants there is inflow of funds and in case of the purchase of the raw materials and machineries on credit, there is inflow of funds to the extent of the value of the assets acquired on credit. Hence the answer is option (a).
2. Answer : (e) <
TOP
>
Reason : At the financial breakeven point, DFL is undefined. Hence, DTL will also be undefined. Hence, (e) is not correct and the rest are correct options.
3. Answer : (c) <
TOP
>
Reason : If the market risk premium decreases (but expected inflation is unchanged), the required return on both stocks will decrease but the decrease will be greater for Stock Y.
4. Answer : (e) <
TOP
>
Reason : Alternative (e) is the correct statement, all other alternatives are not correct
5. Answer : (b) <
TOP
>
Reason : Suppose X percentage of the portfolio will consist of security A,
 $12.8 = 14(X) + 11(1 - X)$ or, $X = 0.60$.
6. Answer : (b) <
TOP
>
Reason : As the number of securities in a portfolio increases the portfolio variance decreases. Also portfolio variance depends more on average covariance.
7. Answer : (c) <
TOP
>
Reason : If you desire maximum diversification, you should search for stocks with a correlation coefficient equal to -1 .
8. Answer : (b) <
TOP
>
Reason : An increase in the expected future inflation rate has the effect of shifting the security market line upward by the amount of the expected increase in inflation
9. Answer : (e) <
TOP
>
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).
10. Answer : (b) <
TOP
>
Reason : The risk remaining after extensive diversification is primarily systematic risk.
11. Answer : (d) <
TOP
>
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).
12. Answer : (b) <
TOP
>
Reason : The security market line provides a picture of the risk-return tradeoff required by diversified investors considering various risky assets.
13. Answer : (d) <
TOP
>
Reason : The higher the correlation of returns between the two stocks, the higher the portfolio's risk.

14. Answer : (a) TOP
≥
Reason : Longer the term to maturity, higher will be the price change. Of the 20-year zero coupon bond and 10-year zero coupon bond, price change is high in case of 20 year bond. Smaller the coupon rates higher is the price change with a change in YTM. Hence, of (a), (c) and (d), the change in price is higher in case of (a).
15. Answer : (c) ≤
TOP
≥
Reason : $EMI = 10,0000/PVIFA(0.5\%,240) = 10,00000/139.581 = 7164.30$
1st Installment: Int. Rs.5000 Principal Rs.997836
2nd Installment: Int. Rs. 4989.18 Principal Rs. 995661
16. Answer : (e) ≤
TOP
≥
Reason : Required return as per CAPM = $R_f + \beta (R_m - R_f)$
where $R_f = 7\%$, $\beta = 1.5$ &
 $R_m - R_f = 8\%$
Required return = $7 + 1.5 \times 8 = 19\%$.
As expected return of 17% is
Less than the required return do not purchase the stock.
17. Answer : (d) ≤
TOP
≥
Reason : If we were to observe a downward shift in the required returns of all stocks, that would be a signal that investors believe that the economy will experience deflation.
18. Answer : (a) ≤
TOP
≥
Reason : The tighter the probability distribution of expected returns, the more likely the outcome will be close to the expected value and the less likely that the actual return will fall far short of the expected return.
19. Answer : (e) ≤
TOP
≥
Reason : Capital structure ratios are used to measure the financial risk. i.e the degree of risk resulting from debt financing.
Capital structure ratios are used to identify prospective sources of funds. Capital structure ratios are used to forecast borrowing prospects of the firm. So all the statements are true.
Hence option (e) is the answer.
20. Answer : (a) ≤
TOP
≥
Reason : If the interest expense decreased by a greater margin than the decrease in operating income, net income would increase because net income is arrived after deducting interest expense.
21. Answer : (c) ≤
TOP
≥
Reason : Remember the EFR formula is stated as: $EFR = (A^*/S)\Delta S - (L^*/S)\Delta S - (m)(S_1)(RR)$. If the firm's dividend payout decreases, RR will increase and EFR will decrease, not increase. Therefore, statement (a) is false. If m increases, EFR will decrease. Therefore, statement (b) is false. If the company reduces its reliance on accounts payable, then spontaneous liabilities will decrease. Thus, EFR will increase. Therefore, statement c is correct. If the company is operating well below full capacity, then it will not need new fixed assets. Therefore, new fixed assets required will be smaller and EFR will decrease. Therefore, statement d is false. If the company can increase its accrued wages, spontaneous liabilities will increase and accordingly EFR will decrease and hence (e) is false.
22. Answer : (c) ≤
TOP
≥

$$\frac{\text{EPS} \times \frac{P}{E} \text{ Multiple}}{\text{Net worth}}$$

Reason : MV to book value ratio is equal to $\frac{\text{Net worth}}{\text{No. of shares}}$. This is equal to RoE P/E multiple.

Hence, if MV to BV is equal to industry average but RoE is less than the industry average then P/E multiple should be more than other firms in the industry. Hence (c) is the answer.

A firm has a market to book value ratio that is equivalent to the industry average and an ROE that is less than the industry average.

Return on total Equity = Net income / Average total Equity

Return on owners Equity = (Net income - Preference Dividend) / Average common Equity

Earnings per share = Net income - Preference Dividend / No. of outstanding shares

P/E ratio = Market Price of the share / EPS

This implies that the Earnings Per share of the firm is less than industry average. So The firm has a higher P/E ratio than other firms in the industry.

23. Answer : (d)

Reason : If a firm's ratio of (total liabilities/total assets) is higher than the industry average while the total capitalization of the firm's stockholders' equity) is lower than the industry average, this implies that the earnings left to the stockholders is less because of the liabilities of the firm. So the most likely assumption is that the firm has more current liabilities than the industry average. Hence, the given information, (d) can be concluded, while other alternatives cannot be the conclusions.

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24. Answer : (b)

Reason : Expensing interest shifts an expense to the income statement instead of the balance sheet resulting in lower net income and lower interest coverage since Earnings Before Interest and Tax (EBIT) will be lower and interest expense will be higher.

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25. Answer : (d)

Reason : Financial leverage = %change in EPS / %change in EBIT

So if financial leverage increases market price of the equity shares as well as value of the firm increases. So statement (I) is incorrect. Favourable or positive financial leverage occurs when the firm earns more on the assets purchased with the funds than the fixed financing cost paid. So statement (II) is correct.

A percent change in EBIT results more than a proportionate change in earnings per share. So statement (III) is correct. Hence option (d) is the answer.

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26. Answer : (b)

Reason : Purchasing some additional raw materials on credit thereby creating additional accounts payable.

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27. 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.

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

$$\frac{i(1+i)^n}{(1+i)^n - 1}$$

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.

28. Answer : (c)

Reason : Buy-back facilities are available for CPs. Hence option (c) is not the feature of commercial paper.

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29. 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.

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30. Answer : (e)

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.

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31. 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 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.

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32. Answer : (a)

Reason : For any investment, the investor is required to bear two types of risks – Diversifiable and non-diversifiable. Changes in the Government policy, war, inflation (due to high level of fiscal deficit), drought, etc are the examples of non-diversifiable risk as these will affect the entire market. But the change in the Government policy on the entertainment industry will affect the instruments for that sector only that may be easily diversifiable.

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33. Answer : (b)

Reason : If the YTM of bond X is greater than the YTM of bond Y, other things remaining the same, then the market price of bond X is less than the market price of bond Y. So II is true. I is true according to the bond value theorem, "A change in YTM affects the bonds with a higher YTM more than it does bonds with a lower YTM". Since statement (I) and (II) are true, option (b) is the answer.

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34. Answer : (b)

$$\frac{\text{Coupon amount}}{\text{Market price}}$$

Reason : Current yield = $\frac{\text{Coupon amount}}{\text{Market price}}$

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$$\text{Coupon rate} = \frac{\text{Coupon amount}}{\text{Face value}}$$

∴ Current yield = Coupon rate implies that market price = face value. Further this means that the bond is trading at its face value.

Hence both (I) and (II) are true.

35. Answer : (b)

Reason : If the E(P/E) ratio is greater than the actual P/E ratio, it indicates that the stock is under priced 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.

36. 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.

37. 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).

38. Answer : (c)

Reason : A bond-warrant package could either increase or decrease the riskiness of the common equity depending on the value of the warrant. The warrants issued generally to minimize the risk of the bond and are generally preferred by the risk investors.

39. Answer : (c)

Reason : As the expected growth rate in dividends increases, other things being equal, the price increases to a greater extent than dividends. So the capital gains yield is more than the dividend yield. Hence the expected return depends more on the capital gains yield and less on the dividend yield. Therefore statement I is true. Also for the same expected earnings an increase in the expected growth rate in dividends causes the P/E ratio to increase. Hence statement II is not true. When the growth prospects are limited the expected return depends more on dividend yield and less on capital gains yield, and the P/E ratio is low. Hence high dividend yield and low P/E ratio indicate limited growth prospects. Therefore statement III is true. Hence option © is the answer.

40. Answer : (d)

Reason : Unsystematic risk can be eliminated through diversification. All other statements are not true.

41. Answer : (a)

Reason : At the end of 15 years, the amount of expenditure will be = Rs, 5,00,000 x $(1.03)^{15}$ = Rs.7,78,983.71

$\frac{7,78,983.71}{\text{FVIFA}(8\%,15 \text{ years})}$

So the required amount of annual installment will be = $\frac{7,78,983.71}{\text{FVIFA}(8\%,15 \text{ years})}$
 $=28,689.74 = \text{Rs. } 28,690.$

42. Answer : (d)

Reason : Equated annual withdrawal(EAI) $\times$ PVIFA(10,10%) = Rs.2,00,000

$$\text{EAI} \times 6.145 = 2,00,000$$

$$\text{EAI} = 2,00,000/6.145 = \text{Rs}32,546$$

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: $15,000 \times \text{FVIFA}(11\%,20) = X + 75,000 \text{ PVIFA}(11\%,25) \text{ PVIF}(11\%,5)$

$$5,000 \times 64.203 = X + 75,000(8.422) \times 0.5934$$

$$963045 = X + 3,74,821$$

$$X = \text{The amount which will be returned} = \text{Rs.}588,224.$$

44. Answer : (e)

Reason : Let, the required rate of return be r per month

The present value of all the payments

= Rs.100 $\times$ PVIFA (r, 50) So, by the condition,

$$100 \times \text{PVIFA}(r, 50) = 7,500 \text{ PVIF}(r, 60)$$

$$\text{Or, PVIFA}(r, 50) - 75 \text{ PVIF}(r, 60) = 0$$

If r = 1.00 percent, left hand side = $39.196 - 75 \times 0.550 = -2.054$ and at

r = 2, left hand side = $31.424 - 75 \times 0.305 = 8.549$

By interpolation, we get,

$$\frac{r-1}{2-1} = \frac{0+2.054}{8.549+2.054} \quad \text{or,} \quad r = 1.1937$$

So, the effective annual rate of interest

$$= \left\{ \left(1 + \frac{1.1937}{100} \right)^{12} - 1 \right\} \times 100 = 15.30 \text{ percent}$$

45. Answer : (a)

Reason : Cost of the house = Rs.5,00,000 and the amount of loan = Rs.4,00,000

$$\left\{ \left(1 + \frac{9}{4 \times 100} \right)^4 - 1 \right\} \times 100$$

The effective rate of interest per annum = $\left\{ \left(1 + \frac{9}{4 \times 100} \right)^4 - 1 \right\} \times 100$
 $= 9.31 \text{ percent.}$

And so the effective rate of interest per month is $\left\{ (1.0931)^{1/12} - 1 \right\} \times 100$
 $= 0.74 \text{ percent}$

$$\text{Now, PVIFA}(0.0074\%, 120) = \frac{(1.0074)^{120} - 1}{(0.0074) \times (1.0074)^{120}}$$

$$= \frac{1.422}{0.0074 \times 2.422} = 79.348$$

Hence, the required amount of monthly installment is = $\frac{\text{Rs.}400,000}{79.348}$
 $= \text{Rs.}5041.10 \text{ or Rs.}5041 \text{ (approx.).}$

46. Answer : (b)

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

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 $\geq$

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computed as:

$$k_x = R_f + \beta_x (k_m - R_f)$$

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

$$\beta_x = \frac{\text{Cov}(k_j, k_m)}{\text{Var}(k_m)} = \frac{\rho_{xm} \sigma_x \sigma_m}{\text{Var}(k_m)} = \frac{0.45 \times \sqrt{10} \times \sqrt{3.33}}{10} = 0.26.$$

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

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

47. Answer : (b)

Reason : Beta is measured by covariance of returns on stock and market divided by variance of the market returns. In the given case,

$$0.8 = \frac{225}{\text{Variance}_m}$$

$$\Rightarrow \text{Variance of the market returns} = \frac{225}{0.8} = 281.25$$

$$\therefore \text{Standard deviation of market returns} = \sqrt{281.25} = 16.77\%.$$

48. 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 = $R_f + B_p (R_m - R_f)$

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

$$\Rightarrow R_f + 25.2 - 1.8 R_f = 20.4 = 0.8 R_f = 4.8$$

$$R_f = 6\%$$

$$\text{New weighted Beta} = (200 \times 0.5 + 200 \times 2 + 100 \times 3)/500 = 1.6$$

$$\text{New required rate of return} = 6 + 1.6(14 - 6) = 18.8\%.$$

49. Answer : (b)

Reason : Return from each of the given scenarios may be obtained as

Price (Rs.)	10	11	12
Return	$\frac{1 + (10 - 10)}{10} \times 100$	$\frac{1 + (11 - 10)}{10} \times 100$	$\frac{1 + (12 - 10)}{10} \times 100$
	= 10 percent	= 20 percent	= 30 percent
Probability	0.3	0.40	0.3

So, the expected return is $10 \times 0.30 + 20 \times 0.40 + 30 \times 0.30 = 3 + 8 + 9 = 20$ percent.

Expected return from the shares of SMS Ltd is = 20 percent

Returns from the market under various scenarios can be estimated as

Market index	4370	4750	5130
Return	$\frac{4370 - 3800}{3800} \times 100$ = 15 percent	$\left(\frac{4750 - 3800}{3800} \right) \times 100$ = 25 percent	$\frac{(5130 - 3800) \times 100}{3800}$ = 35 percent
Probability	0.3	0.4	0.3

Hence, the expected return

$$= 15 \times 0.3 + 25 \times 0.4 + 35 \times 0.3 = 25 \text{ percent.}$$

And the expected return from market index is = 25 percent

So, the variance on the market return can be calculated as

$$\sigma_m^2 = \{0.3 \times (15 - 25)^2 + 0.4 \times (25 - 25)^2 + 0.3 \times (35 - 25)^2\} = 60$$

Now, the covariance between the return from the share and return from the market can be calculated as

$$= 0.30 \times (10 - 20)(15 - 25) + 0.4 \times (20 - 20)(25 - 25) + 0.3 \times (30 - 20)(35 - 25)$$

$$= 0.3 \times 100 + 0.3 \times 100 = 60$$

Hence, the beta value for the shares of SMS Ltd is

$$= \frac{\text{covariance between the returns from the shares and market}}{\text{variance on the market returns}}$$

$$= \frac{60}{60} = 1.00$$

50. Answer : (c)

Reason : The percentage price change is more in case of small coupon bonds than the high coupon bonds. Hence, (a) is not correct. As coupon rate of X is greater than Y, the price of X will be higher than Y. Hence, (b) is not correct. As the YTM is higher than the coupon rates of both X and Y both the bonds will be trading below par. Hence, (c) is correct and (d) and (e) is not correct and the answer is (c).

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51. Answer : (b)

$$\text{Reason : Sustainable gr. Rate} = \frac{m(1-d) \frac{A}{E}}{\frac{A}{S} - m(1-d) \frac{A}{E}}$$

$$\begin{aligned} \text{Equity capital} &= \text{Rs.15 lakh} \\ \text{ROA} &= 0.17 \\ \text{NP} &= 48.75 \times 0.17 = \text{Rs.8.29 lakh} \\ \text{Assets to sales Ratio} &= 1.15 \\ \text{NS} &= 1.15 \times 48.75 = \text{Rs.56.06 lakh} \end{aligned}$$

$$d = \frac{\text{Dividends}}{\text{PAT}} = \frac{5.25}{8.29} = .63$$

$$m = \frac{8.29}{56.06} = 0.148$$

$$\text{SGR} = \frac{\frac{.148(1-.63) \frac{48.75}{15}}{\frac{1}{1.15} - .148(1-.63) \frac{48.75}{15}}}{\frac{0.1780}{0.6916}} = 25.7\%$$

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52. Answer : (c)

Reason : IV of A Ltd. = Rs.34.12

Price of B Ltd. = 34.12 – 7.60 = Rs.26.52

Price = PV of dividends + PV of IV

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

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

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

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

$$23.065x = 0.6968$$

$$x = 0.03$$

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

53. Answer : (b)

Reason : Current $k_e = 0.08 + 0.064(1.1) = 0.1504$

$$\text{Current } P = \text{Rs.}1.05 / (0.1504 - 0.07) = \text{Rs.}13.06$$

$$\text{New } k_e = 0.11 + .064(1.1) = 0.1804$$

$$\text{New } P = \text{Rs.}1.05 / (0.1804 - 0.07) = \text{Rs.}9.51$$

$$\Delta P = -\text{Rs.}3.55$$

54. Answer : (b)

$$\text{Reason : } k_e = 0.06 + 0.5(0.13 - 0.06) = 0.095$$

$$\text{Rs.}28 = \text{Rs.}1.70(1+g) / (0.095 - g)$$

$$g = 0.0323 \text{ or } 3.23\%$$

55. Answer : (c)

$$\text{Reason : Old } k_e = 0.06 + \beta_j (0.142 - 0.06) = 0.06 + 0.082\beta_j$$

$$P = \text{Rs.}0.68(1.07) / (0.06 + 0.082\beta_j - 0.07) = \text{Rs.}11.44$$

$$\beta_j = 0.897$$

$$\text{New } k_e = 0.06 + 0.897(1.4)(0.082) = 0.1629 \text{ or } 16.29\%$$

$$P = \text{Rs.}0.7276 / (0.1629 - 0.07) = \text{Rs.}7.83$$

A decrease of Rs.3.61 per share.

56. Answer : (d)

Reason : The combined beta for the 7 securities is X,

$$1.28 = X(7/8) + 1.75(1/8) \text{ or, } X = 8.49$$

New securities beta is y,

$$8.49(1/8) + y(1/8) = 1.15 \text{ or, } y = 0.71$$

57. Answer : (a)

$$\text{Reason : } E(R) = -20\%(0.25) + 0\%(0.30) + 20\%(0.25) + 40\%(0.20) = 8\%$$

$$\sigma = [(-20\% - 8\%)^2(0.25) + (0\% - 8\%)^2(0.30) + (20\% - 8\%)^2(0.25) + (40\% - 8\%)^2(0.20)]^{0.5}$$

$$= 20.9\%.$$

58. Answer : (a)

$$\text{Reason : Interest} = \left(1 + \frac{0.05}{2}\right)^2 - 1 = 5.0625\%$$

$$\text{Future value of the annuity} = 1000 \text{ FVIFA}(5.06, 3) = \text{Rs.}3154.44.$$

59. Answer : (b)

Reason : Average return on market = 8%

Average return on valance stock =

$$\frac{26}{3} = 8.67\%$$

$$\beta = \frac{\text{Co variance}}{\text{Variance on market}} = \frac{(16-8)(13-8.67) + 0 + (-8)(4-8.67)}{(16-8)^2 + (-8)^2}$$

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$$\frac{72}{128} = 0.5625$$

Beta of the stock = 0.5625

Expected return = $0.06 + 0.5625(0.12 - 0.06) = 9.375\%$.

60. Answer : (c)

Reason : Provision for contingencies = 60,000 + 10,000 = Rs. 70,000
 Short term investment = 60,00,000 – 30,00,000 = Rs.30,00,000
 Therefore current assets = 30,00,000 + 10,00,000 = Rs.40,00,000
 Current liabilities = 70,000 + 500,000 = Rs. 570,000
 Net working capital = 40,00,000 - 570,000 = Rs.34,30,000

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61. Answer : (c)

Reason : Realization of debtors involves conversion of receivables to cash. To that extent the current assets remain constant. Raw materials purchased on credit causes an equal increase in current assets (inventory) and current liabilities (Sundry creditors). Conversion of preference shares in to equity involves the conversion of one form of long term finance to another form of long term finance. Considering the above we can say that there is no change in the NWC.

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62. 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:

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

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

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

63. Answer : (b)

Reason : Beta is a measure of the non-diversifiable risk of an asset relative to that of the market portfolio. Beta of the market portfolio is 1 and the securities with beta of less than 1 are classified as securities with below average risk and beta of more than 1 as securities with above average risk. Hence, statement II is true.

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According to SML, a security is said to be correctly priced, if its required rate of return according to SML is equal to its expected return. As the required rate of return is not equal to the expected return the stock cannot be said to be correctly priced. Hence, statement I is not true. If the expected rate of return is more than the required rate of return the stock is said to be undervalued and if the expected rate of return is less than the required rate of return it is said to be overvalued. In the given case, as the expected rate of return is more than the required rate of return, the stock is an undervalued security. Hence, statement III is not true. When security's expected return and beta are plotted on a graph with reference to the SML of the security, the security will lie above the SML if it is undervalued and will lie below the SML if it is overvalued. In the given case, as the security is undervalued it will lie above the SML and the beta of the security is immaterial. Hence, statement IV is not true.

64. Answer : (b)

Reason : Assets that are expected to vary proportionately with sales

$$= \text{Rs}6.0 - \text{Rs}2.6 = \text{Rs}3.4 \text{ million}$$

External financing needed

$$\text{EFR} = A/S (\Delta S) - L/S (\Delta S) - mS_1 (1-d)$$

$$= [(Rs3.4/Rs12)(Rs6) - (Rs0.6/Rs12)(Rs6)] - [0.05(Rs15 + Rs18) - 2(Rs0.25)]$$

$$= \text{Rs}0.25 \text{ million, or Rs}2,50,000$$

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65. Answer : (d)

Reason : Degree of Total leverage(DTL) = % change in NI/% change in sales

$$= 0.175/0.10 = 1.75.$$

$$\text{DTL} = \frac{S - VC}{S - VC - FC - I}$$

$$1.75 = \frac{\text{Rs.}10,000,000 - \text{Rs.}8,500,000}{\text{Rs.}10,000,000 - \text{Rs.}8,500,000 - \text{Rs.}500,000 - I}$$

$$1.75 = \frac{\text{Rs.}1,500,000}{\text{Rs.}1,000,000 - I}$$

$$\text{Rs.}15,00,000 = \text{Rs.}17,50,000 - 1.75I$$

$$I = \text{Rs.}1,42,857.14 \cdot \text{Rs.}1,42,857.$$

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66. Answer : (b)

Reason : Equity multiplier = $1/(1 - D/A) = 1/(1 - 0.36) = 1.0/0.64 = 1.5625$.

$$\text{ROE} = \text{ROA} \times \text{Equity multiplier} = (12\%) \times (1.5625) = 18.75\%.$$

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67. Answer : (c)

Reason : Internet Sale:

$$\text{ROE} = \text{NI}/\text{CE}$$

$$0.17 = \text{Rs.}10,000/(\text{Rs.}100,000 - 2D)$$

$$0.17 \times (\text{Rs.}100,000 - 2D) = \text{Rs.}10,000$$

$$\text{Rs.}17,000 - .34D = \text{Rs.}10,000$$

$$D = \text{Rs.}7,000/0.34 = \text{Rs.}20,588$$

Complingo Corp.:

$$0.17 = \text{NI} / (\text{Rs.}100,000 - D)$$

$$0.17 = \text{NI} / (\text{Rs.}100,000 - \text{Rs.}20,588)$$

$$0.17 \times \text{Rs.}100,000 - 0.17 \times \text{Rs.}20,588 = \text{NI}$$

$$\text{NI} = \text{Rs.}17,000 - \text{Rs.}3,500 = \text{Rs.}13,500$$

InternetSale:

$$\text{TATO} = \text{Sales} / \text{Total Assets} = 3.5$$

$$(2 \times \text{Sales}) / \text{Rs.}100,000 = 3.5$$

$$(2 \times \text{Sales}) = \text{Rs.}350,000$$

$$\text{Sales} = \text{Rs.}350,000/2 = \text{Rs.}175,000$$

Now, calculate Profit Margin for Complingo:

$$\text{PM} = (\text{NI} / \text{Sales}) = \text{Rs.}13,500 / \text{Rs.}175,000 = 0.07714 \text{ or } 7.71\%.$$

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68. Answer : (b)

Reason : $\text{DTL} = \text{DOL} \times \text{DFL} = \% \text{change in EPS} / \% \text{change in output}$

$$1.6 \times 2.1 = \% \text{change in EPS} / 0.5 = 168\%$$

$$\text{New EPS} = 168\% \text{ of } 3.25 = 5.46$$

Answer is (b).

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69. Answer : (a)

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Reason : Degree of Operating Leverage(DOL) using new sales, new variable cost percentage, and new fixed costs: ≥

$$S_1 = \text{Rs.}100,000,000; FC_1 = \text{Rs.}55,000,000; VC = 0.25(S_1) = \text{Rs.}25,000,000.$$

$$\text{DOL New} = \frac{100 - 25}{100 - 25 - 55} = \frac{75}{20} = 3.75.$$

70. Answer : (e)

Reason : Let the cost of funds be k. ≤
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So, from the terms of the question, we get, $\text{Rs.}9,000 \times \frac{(1+k)^{60} - 1}{k(1+k)^{60}} + \frac{\text{Rs.}1,20,000}{(1+k)^{12}}$

At, $k = 1\%$, the RHS = $\text{Rs.}9000 \times 44.955 + \text{Rs.}1,20,000 \times 0.887 = \text{Rs.}5,11,035$

At, $k = 2\%$ percent, the RHS = $\text{Rs.}9000 \times 34.7609 + \text{Rs.}1,20,000 \times 0.7885 = \text{Rs.}4,07,468$

By interpolation, we get $k = 1.107\%$

So, the annualized cost of funds will be = $\{(1.01107)^{12} - 1\} \times 100 = 14.123 = 14.12\%$ percent (approximately)

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