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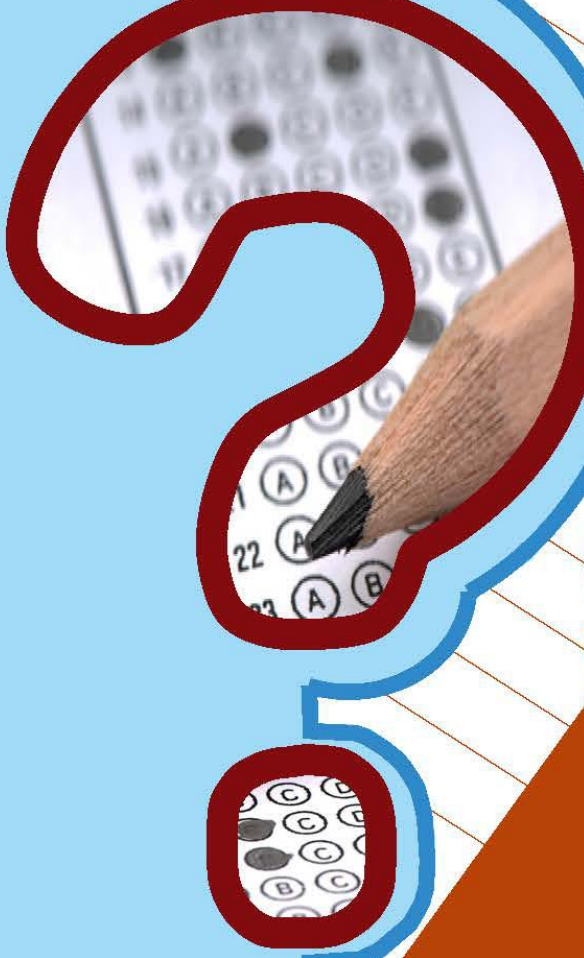

# PAPER - 14

# MCQs

BIT QUESTIONS

# Strategic Financial Management

DIRECTORATE OF STUDIES
THE INSTITUTE OF
COST ACCOUNTANTS OF INDIA
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# PAPER-14

# Strategic Financial Management Bit Questions

**(I) <u>Mark the correct answer. Only indicate (A) or (B) or (C) or (D) and give justification.</u>**

1. **A Ltd. has an EPS of ₹3 last year and it paid out 60% of its earnings as dividends that year. This growth rate in earnings and dividends in the long term is expected to be 6%. If the required rate of return on equity for Ashrin Ltd. is 14%. Calculate the P/E ratio of A Ltd.**
   **(A) 7.50**
   **(B) 7.65**
   **(C) 7.85**
   **(D) 7.95**

2. **The current spot rate for the US$ is ₹50. The expected inflation rate is 6 per cent in India and 2.5 per cent in the US. What will be the expected spot rate of the US$ a year hence?**
   **(A) ₹51.71**
   **(B) ₹50.71**
   **(C) ₹57.01**
   **(D) ₹52.71**

3. **DEF Ltd. placed ₹52 Crores in overnight call with a foreign bank for a day in overnight call. The call ruled at 5.65% p.a. What is the amount it would receive from the foreign bank the next day?**
   **(A) ₹52,00,70,493**
   **(B) ₹52,00,80,493**
   **(C) ₹52,00,80,593**
   **(D) ₹52,00,80,693**

4. **The rates available in the Kolkata market are: ₹/$ Spot 46.75/78; £/$ 0.5285/86. If an Indian Importer requires pounds, calculate the rate quoted to him?**
   **(A) ₹88.51/£**
   **(B) ₹85.51/£**
   **(C) ₹86.51/£**
   **(D) ₹87.51/£**

5. **A Ltd., an export customer who relied on the interbank rate of ₹/$ 46.50/10 requested his banker to purchase a bill for USD 80,000. Calculate the rate to be quoted to A Ltd., if the banker wants a margin of 0.08%.**
   **(A) ₹45.45**
   **(B) ₹44.44**
   **(C) ₹46.46**
   **(D) ₹47.47**

6. **_____ estimate the difference between the required rate of return and the growth rate.**
   **(A) Retention ratio**
   **(B) Leverage ratio**
   **(C) Payout Ratio**
   **(D) Dividend yield ratio**

7. **Two Firms P Ltd and M Ltd are similar in all respects expect that M Ltd uses ₹10,00,000 debt in its capital structure. If the corporate tax rate for these firms is 40%, Calculate the value of M Ltd exceeds that of P Ltd?**
   **(A) ₹4,00,000**
   **(B) ₹4,40,000**
   **(C) ₹4,04,000**
   **(D) ₹4,00,400**

8. **Annual Cost Saving ₹4,00,000; Useful life 4 years; Cost of the Project ₹11,42,000. The Payback period would be-**
   **(A) 2 years 8 months**
   **(B) 2 years 11 months**
   **(C) 3 years**
   **(D) 1 year 10 months**

9. **There are 4 investments**

| | X | Y | Z | U |
|---|---|---|---|---|
| The standard deviation is | 37,947 | 44,497 | 42,163 | 41,997 |
| Expected Net Present Value(₹) | 90,000 | 1,06,000 | 1,00,000 | 90,000 |

   **Which investment has the highest risk?**
   **(A) X**
   **(B) Y**
   **(C) X**
   **(D) U**

10. **The spot rate of the US dollar is ₹65.00/USD and the four month forward rate is 65.90/USD. The annualized premium is**
    **(A) 4.2%**
    **(B) 5.1%**
    **(C) 6.0%**
    **(D) 6.4%**

11. **A stock is currently sells at ₹350. The put option to sell the stock sells at ₹380 with a premium of ₹20. The time value of option will be**
    **(A) ₹10**
    **(B) ₹-10**
    **(C) ₹20**
    **(D) ₹0**

12. **An investor owns a stock portfolio equally invested in a risk free asset and two stocks. If one of the stocks has a beta of 0.75 and the portfolio is as risky as the market, the beta of the stock in portfolio is**
    **(A) 2.12**
    **(B) 2.25**
    **(C) 2.56**
    **(D) 2.89**

13. **You are given the following information: required rate of return on risk free security 7%; required rate of return on market portfolio of investment 12%; beta of the firm 1.7. The cost of equity capital as per CAPM approach is**
    **(A) 16.3%**
    **(B) 18.0%**
    **(C) 18.60%**
    **(D) 19%**

14. **The following statement is true in the context of rupee-dollar exchange rate with $r_i$ denoting interest rate in India and $r_u$ denoting interest rate in the US.**
    **(A) Rupee will be at forward discount if $r_i > r_u$**
    **(B) Rupee will be at forward premium if $r_u > r_i$**
    **(C) Rupee will be forward premium if $r_i > r_u$**
    **(D) Rupee will be at par with dollar if $r_i = r_u$.**

**15. The following is not a systematic risk.**
**(A) Market Risk**
**(B) Interest Rate Risk**
**(C) Business Risk**
**(D) Purchasing Power Risk**

**16. The following statement is true: (If 'r' denotes the correlation coefficient)**
**(A) r = +1 implies full diversification of securities in a portfolio**
**(B) r = -1 implies full diversification of securities in a portfolio**
**(C) r = 0 implies an ideal situation of zero risk**
**(D) 'r' is independent of diversification. Nothing can be inferred based on r**

**17. The following is not a feature of Capital Market Line:**
**(A) There is no unsystematic risk**
**(B) The individual portfolio exactly replicates market portfolio in terms of risk and reward**
**(C) Estimates portfolio return based on market return**
**(D) Diversification can minimize the individual portfolio risk**

**18. A project has a 10% discounted pay back of 2 years with annual after tax cash inflows commencing from year end 2 to 4 of ₹400 lacs. How much would have been the initial cash outlay which was fully made at the beginning of year 1?**
**(A) ₹400 lacs**
**(B) ₹452 lacs**
**(C) ₹633.80 lacs**
**(D) ₹497.20 lacs**

**19. A project is expected to yield an after tax cash inflow at the end of year 2 of ₹150 lacs and has a cost of capital of 10%. Inflation is expected at 3% p.a. While computing the NPV of t the project, this cash flow will be taken as the following:**

$$(A)\ \frac{\frac{150}{1.03}}{(1.1)^2}$$

$$(B)\ \frac{\frac{150}{(1.03)^2}}{(1.1)^2}$$

$$(C)\ \frac{150}{(111.33\%)^2}$$

$$(D)\ \frac{150(1.03)^2}{(1.11)^2}$$

**20. A firm has an asset β = 1.3, equity β = 1.5. Then, which of the following is true?**
**(A) The firm is unlevered**
**(B) Debt β is also 1.3**
**(C) The above data is not possible**
**(D) The firm is leveraged and the debt β is lower than the asset β**

**21. For a portfolio containing three securities A, B and C, correlation coefficients $\rho AB = +0.4$; $\rho AC = +0.75$; $\rho BC = -0.4$; standard deviation $\sigma A = 9$; $\sigma B = 11$; $\sigma C = 6$; weights $\omega A = 0.2$; $\omega B = 0.5$; $\omega C = 0.3$; the covariance of securities A and B is**
**(A) 3.96**
**(B) 24.75**
**(C) 39.6**
**(D) 247.5**

**22. A ₹1,000 per value bond bearing a coupon rate of 14% matures after 5 years. The required rate of return on this bond is 10%. The value of the bond (to the nearest rupee) will be:**
**(A) 1,125**
**(B) 1,152**
**(C) 1,512**
**(D) 862.20**

**23. The following information is available for a mutual fund:**

| | |
|---|---|
| **Return 13%** | **Risk (S.D. i.e. $\sigma$) 16%** |
| **Beta ($\beta$) 0.90** | **Risk Free Rate 10%** |

**Treynor's Ratio of the mutual fund is:**
**(A) 3.85**
**(B) 4.43**
**(C) 3.33**
**(D) 3.73**

**24. The 90 day interest rate is 1.85% in USA and 1.35% in the UK and the current spot exchange rate is $ 1.6/£. The 90-day forward rate is**
**(A) $ 1.607893**
**(B) $ 1.901221**
**(C) $ 1.342132**
**(D) $ 1.652312**

**25. The intercept of the Security Market Line (SML) on the y axis is**
**(A) $E(R_m) - R_f$**
**(B) $1/[E(R_m) - R_f]$**
**(C) $R_f - E(R_m)$**
**(D) $R_f$**

**26. A mutual fund wants to hedge its portfolio of shares worth ₹10 crore using the NIFTY Index Futures. The contract size is 100 times the index. The index is currently quoted at 6840. The Beta of the portfolio is 0.8. The beta of the index may be taken as 1. What is the number of contracts to be traded?**
**(A) 110**
**(B) 117**
**(C) 145**
**(D) 123**

**27. A call option at a strike price of ₹200 is selling at a premium of ₹24. At what share price on maturity will it break-even for the buyer of the option?**
**(A) ₹200**
**(B) ₹176**
**(C) ₹224**
**(D) ₹248**

**28. A safety mutual fund that had a net asset value of ₹20 at the beginning of a month, made income and capital gain distribution of ₹0.06 and ₹0.04 respectively per unit during the month and then ended the month with a net asset value of ₹20.25. The monthly return is:**
**(A) 2.25%**
**(B) 1.75%**
**(C) 1.25%**
**(D) 1.65%**

**29. Mr. Ravi is planning to purchase the shares of X Ltd. which had paid a dividend of ₹2 per share last year. Dividends are growing at a rate of 10%. What price would Mr. Ravi be willing to pay for X Ltd.'s shares if he expects a rate of return of 20%?**
**(A) ₹22**
**(B) ₹24**
**(C) ₹20**
**(D) ₹21**

**30. The spot price of securities of X Ltd. is ₹160. With no dividend and no carrying cost, compute the theoretical forward price of the securities for 1 month. You may assume a risk free interest rate of 9% p.a.**
**(A) ₹160**
**(B) ₹162.75**
**(C) ₹161.20**
**(D) ₹159.20**

**31. It is given that ₹/£ quote is ₹94.30 – 95.20 and that ₹/$ quote is 66.25 – 66.45. What would be the $/£ quote?**
**(A) 1.42 :1.44**
**(B) 1.44 :1.42**
**(C) 1.44 :1.52**
**(D) 1.52 :1.44**

**32. When are call options and put options said to be 'in the money' in the futures market?**
**(A) In call options when strike price is above the price of underlying futures, call option is 'in the money'. In put options, when the strike price is below the price of underlying futures put option 'is in the money'**
**(B) In call options when strike price is below the price of underlying futures, call option is 'in the money'. In put options, when the strike price is above the price of underlying futures put option 'is in the money'**
**(C) None of the above**
**(D) Both the above**

**33. A firm has an equity beta of 1.40 and is currently financed by 25% debt and 75% equity. What will be the company's equity beta if the company changes its financing policy to 33% debt and 67% equity? [Assume corporate tax at 35% and zero debt beta]**
**(A) 1.62**
**(B) 1.72**
**(C) 1.42**
**(D) 1.52**

**34. XYZ Ltd. has a uniform income that accrues in a 4 - year business cycle. It has an average EPS of ₹20 (per share of ₹100) over its business cycle. Find out the cost of equity capital, if market price is ₹175.**
**(A) 11.43%**
**(B) 12.43%**

**(C) 10.43%**
**(D) 13.43%**

**35. Following information is available regarding a mutual fund:**
**Return 13, Risk (σ) 16, Beta (β) 0.90, Risk free rate 10. Calculate Sharpe ratio.**
**(A) 0.18**
**(B) 0.16**
**(C) 0.19**
**(D) 0.17**

**36. A project had an equity beta of 1.3 and was going to be financed by a combination of 30% debt and 70% equity. Assuming debt-beta to be zero, calculate the project beta and return from the project taking risk free rate of return to be 10% and return on market portfolio of 18%.**
**(A) 14.28%**
**(B) 17.28%**
**(C) 15.28%**
**(D) 16.28%**

**37. X Ltd. issued ₹100, 12% Debentures 5 years ago. Interest rates have risen since then, so that debentures of the company are now selling at 15% yield basis. What is the current expected market price of the debentures?**
**(A) ₹75**
**(B) ₹80**
**(C) ₹90**
**(D) ₹85**

**38.**

| Given | Last Year | Current Year |
|---|---|---|
| Sales unit | 2,000 | 2,800 |
| Selling Price per unit | ₹10 | ₹10 |
| EPS | ₹9.60 | ₹38.40 |

**What is the Degree of Combined Leverage?**
**(A) 6.5**
**(B) 5.6**
**(C) 7.5**
**(D) 5.7**

**39. MI Ltd. has annual sales of ₹365 lacs. The company has investment opportunities in the money market to earn a return of 15% per annum. If the company could reduce its float by 3 days, what would be the increase in company's total return? (Assume 1 year = 365 days)**
**(A) ₹45,000**
**(B) ₹40,000**
**(C) ₹54,000**
**(D) ₹46,000**

**40. In the inter-bank market, the DM is quoting ₹21.50. If the bank charges 0.125% commission for TT selling, what is the TT selling rate?**
**(A) ₹21.47/DM**
**(B) ₹21.53/DM**
**(C) ₹22.78/DM**
**(D) ₹23.45/DM**

**41. The required rate of return on equity is 24% and cost of debt is 12%. The company has a capital structure mix of 80% of equity and 20% debt. What is the overall rate of return, the company should earn? Assume no tax.**
**(A) 21.6%**
**(B) 14.4%**
**(C) 18.6%**
**(D) 17.22%**

**42. Initial Investment ₹20 lakh. Expected annual cash flows ₹6 lakh for 10 years. Cost of capital @ 15%. What is the Profitability Index? The cumulative discounting factor @ 15% for 10 years = 5.019.**
**(A) 1.51**
**(B) 1.15**
**(C) 5.15**
**(D) 0.151**

**43. The following details relate to an investment proposal of XYZ Ltd.**
**Investment outlay — ₹100 lakhs**
**Lease Rentals are payable at ₹180 per ₹1,000**
**Term of lease—8 years**
**Cost of capital—12%**
**What is the present value of lease rentals, if lease rentals are payable at the end of the year? [Given PV factors at 12% for years (1-8) is 4.9676.**
**(A) ₹98,14,680**
**(B) ₹89,41,680**
**(C) ₹94,18,860**
**(D) ₹96,84,190**

**44. An investor wrote a naked call option. The premium was ₹2.50 per share and the market price and exercise price of the share are ₹37 and ₹41 respectively. The contract being for 100 shares, what is the amount of margin under First Method that is required to be deposited with the clearing house?**
**(A) ₹590**
**(B) ₹250**
**(C) ₹740**
**(D) ₹400**

**45. An investor buys a call option contract for a premium of ₹200. The exercise price is ₹20 and the current market price of the share is ₹17. If the share price after three months reaches ₹25, what is the profit made by the option holder on exercising the option? Contract is for 100 shares. Ignore the transaction charges.**
**(A) ₹200**
**(B) ₹500**
**(C) ₹300**
**(D) ₹400**

**46. Unlevered beta and effective tax rate of S Ltd is 0.8 and 35 percent respectively. The company intends to undertake a project with 60 percent debt financing. Assuming risk free rate of 7.5 % and market premium 8 %, calculate cost of equity (rounded up to two decimal points)**
**(A) 13.90%**
**(B) 20.14%**
**(C) 16.40%**
**(D) None of (A), (B) or (C)**

**47. The spot and 6 months forward rates of US $ in relation to the rupee (₹/$) are ₹40.9542/41.1255 and ₹41.8550/9650 respectively. What will be the annualized forward margin (premium with respect to Bid Price)?**
**(A) 4.10%**
**(B) 4.40%**
**(C) 4.50%**
**(D) None of (A), (B) or (C)**

**48. A mutual Fund had a Net Asset Value (NAV) of ₹72 at the beginning of the year. During the year, a sum of ₹6 was distributed as Dividend.Besides, ₹4 as Capital Gain distributions. At the end of the year, NAV was ₹84. Total return for the year is :**
**(A) 30.56%**
**(B) 31.56%**
**(C) 40.56%**
**(D) 41.56%**

**49. The standard deviation of Greaves Ltd. Stock is 24% and its correlation coefficient with market portfolio is 0.5. The expected return on market is 16% with the standard deviation of 20%. If the risk free return is 6%, what will be the required rate of return on Greaves Ltd. Script?**
**(A) 12%**
**(B) 11%**
**(C) 13%**
**(D) 11.5%**

**50. Your customer requests you to book a sale forward exchange contract for US $ 2 million delivery 3rd month. The quotes are: Spot US $ 1= ₹48.050/0.060; 1month margin = 0.0850/0.0900; 2 month margin = 0.2650/0.2700; 3 month margin = 0.5300/0.5350. You are required to make an exchange profit of 0.125%. Ignore telex charges and brokerage.**
**(A) ₹120000**
**(B) ₹230000**
**(C) ₹75000**
**(D) ₹100000**

**51. The Sterling is trading at ₹1.6100 today. Inflation in UK is 4% and that in USA is 3%. What could be spot rate ($/£) after 2 years?**
**(A) 1.5792**
**(B) 1.5892**
**(C) 1.5992**
**(D) 1.5939**

**52. The capital structure of a company is as under: 3,00,000, Equity shares of ₹10 each; 32000,12% Preference shares of ₹100 each; General Reserve ₹15,00,000; Securities Premium Account ₹5,00,000; 25000, 14% Fully Secured Debentures of ₹100 each; Term Loan of ₹13,00,000. Based on these, the leverage of the company is:**
**(A) 60.22%**
**(B) 58.33%**
**(C) 55.21%**
**(D) 62.10%**

**53. Historically, when the market return changed 10%, the return on stock of Arihant Ltd changed by 16%. If variance of market is 257.81, what would be the systematic risk for Arihant Ltd?**
**(A) 320%**
**(B) 480%**

**(C) 660%**
**(D) Insufficient information.**

**54. The beta co-efficient of equity stock of ARISTO LTD is 1.6. The risk free rate of return is 12% and the required rate of return is 15% on the market portfolio. If dividend expected during the coming year ₹2.50 and the growth rate of dividend and earnings is 8%. At what price the stock of ARISTO LTD. Can be sold (based on CAPM)?**
**(A) ₹12.50**
**(B) ₹16.80**
**(C) ₹28.41**
**(D) Insufficient Information.**

**55. The ratio of current assets (₹3,00,000) to current liabilities (₹2,00,000) is 1.5 : 1. The accountant of this firm is interested in maintaining a current ratio of 2 : 1 by paying some part of current liabilities. Hence, the amount of current liabilities which must be paid for this purpose is**
**(A) ₹1,00,000**
**(B) ₹2,00,000**
**(C) ₹2,50,000**
**(D) ₹1,50,000**

**56. Dividend-Payers Ltd. has a stable income and stable dividend policy. The average annual dividend payout is ₹27 per share (Face Value = ₹100). You are required to find out Dividend payout in year 2, if the company were to have an expected market price of ₹160 per share at the existing cost of equity. [The market price in year 1 is ₹150]**
**(A) ₹28.88**
**(B) ₹26.86**
**(C) ₹28.80**
**(D) ₹26.98**

**57. The interest rate in Germany is 11 per cent and the expected inflation rate is 5 per cent. The British interest rate is 9 per cent. How much is the expected inflation rate in Britain?**
**(A) 3.0%**
**(B) 3.1%**
**(C) 4.5%**
**(D) 2.9%**

**58. A project had an equity beta of 1.2 and was going to be financed by a combination of 30% debt and 70% equity (assume debt beta = 0). Hence, the required rate of return of the project is (assume $R_f$ = 10% and $R_m$ =18%)**
**(A) 16.27%**
**(B) 17.26%**
**(C) 16.72%**
**(D) 12.76%**

**59. Consider the following quotes. Spot (Euro/Pound) = 1.6543/1.6557; Spot (Pound/NZ$) = 0.2786/0.2800. Calculate the % spread on the Euro/Pound Rate.**
**(A) 0.085%**
**(B) 0.0085%**
**(C) 0.85%**
**(D) 0.00085%**

**60. A company has expected Net Operating Income – ₹2,40,000; 10% Debt – ₹7,20,000 and Equity Capitalisation rate - 20%. What is the weighted average cost of capital for the company?**
**(A) 0.15385**
**(B) 0.13585**
**(C) 0.18351**
**(D) 0.15531**

**61. The price of Swedish Krones is $ 0.14 today. If it appreciates by 10% today, how many Krones a dollar will buy tomorrow?**
**(A) 6.49351**
**(B) 4.69351**
**(C) 3.49513**
**(D) 5.64913**

**62. A firm has sales of ₹75,00,000, variable cost of ₹42,00,000 and fixed cost of ₹6,00,000. It has a debt of ₹45,00,000 at 9% interest and equity of ₹55,00,000. At what level of sales, the EBIT of the firm will be equal to zero?**
**(A) ₹28,48,500**
**(B) ₹28,84,500**
**(C) ₹22,84,500**
**(D) ₹26,48,500**

**63. E Limited has earnings before interest and taxes (EBIT) of ₹10 million at a cost of 7%., Cost of equity is 12.5%. Ignore taxes. What is the overall cost of capital?**
**(A) 11.26%**
**(B) 11.62%**
**(C) 16.12%**
**(D) 12.61%**

**64. The following various currency quotes are available from the State Bank of India: ₹/£ 81.31/81.33; £/$ 0.6491/0.6498; $/¥ 0.01098/0.01102. The rate at which yen (¥) can be purchased with rupees will be:**
**(A) 1.5270**
**(B) 1.5890**
**(C) 0.5824**
**(D) 0.7824**

**65. The dollar is currently trading at ₹40. If rupee depreciates by 10%, what will be the spot rate?**
**(A) ₹0.0525**
**(B) ₹0.0552**
**(C) ₹0.0225**
**(D) ₹0.0522**

**66. A company has ₹7 Crore available for investment. It has evaluated its options and has found that only four investment projects given below have positive NPV. All these investments are divisible and get proportional NPVs.**

| Project | Initial Investment (₹ Crore) | NPV (₹ Crore) | PI |
|---|---|---|---|
| W | 6.00 | 1.80 | 1.30 |
| X | 3.00 | 0.60 | 1.20 |
| Y | 2.00 | 0.50 | 1.25 |
| Z | 2.50 | 1.50 | 1.60 |

**Which investment projects should be selected?**
**(A) Project W in full and X in part**
**(B) Project Z in full and W in part**

(C) Project W in full and Z in part
(D) Project Z and Y in full and X in part

67. An investor is bullish about X Ltd. which trades in the spot market at ₹1,150. He buys two call option contracts with three months (one contract is 100 shares) with a strike price of ₹1,195 at a premium of ₹35 per share. Three months later, the share is selling at ₹1,240.
Net profit/loss of the investor on the position will be
(A) ₹1,000
(B) ₹16,000
(C) ₹11,000
(D) ₹2,000

68. Duhita Ltd. intends to buy an equipment. Quotes are obtained for two different makes A and B as given below:

| | Cost (₹ Million) | Estimate life (Years) |
|---|---|---|
| A | 4.5 | 10 |
| B | 6.00 | 15 |

Ignoring the operations and maintenance costs, which will be almost the same for A and B, which one would be chapter? The company's cost of capital is 10%.
[Given: PVIFA (10%, 10 yrs.) = 6.1446 and PVIFA (10%, 15 years) = 7.6061]
(A) A will be cheaper
(B) B will be cheaper
(C) Cost will be the same
(D) They are not comparable and therefore nothing can be said about which is cheaper

69. BLC Ltd., a valued customer engaged in import business is in need to remit EURO 1 million to his European exporter. The spot rate of ₹/US$ is ₹65.47/65.57 and that of US$/EURO is $ 0.8053/0.8057. What rate will a banker quote to BLC Ltd. if the bank's margin is 0.50%?
(A) ₹53.09
(B) ₹53.067
(C) ₹53.01
(D) ₹52.99

70. Given for a project:
Annual Cash inflow = ₹80,000, Useful life = 4 years
Undiscounted Pay-Back period = 2.855 years
What is the cost of the project?
(A) ₹1,12,084
(B) ₹2,28,400
(C) ₹9,13,600
(D) None of the above

71. A project had an equity beta of 1.4 and is to be financed by a combination of 25% Debt and 75% Equity. Assume Debt Beta as zero, $R_f$ = 12% and $R_m$ = 18%.
Hence, the required rate of return of the project is
(A) 16.72%
(B) 18.30%
(C) 17.45%
(D) 12.00%

72. An Indian Company is planning to invest in the US. The annual rates of inflation are 8% in India and 3% in USA. If the spot rate is currently ₹60.50/$, what spot rate can you

**expect after 5 years, assuming the inflation rates will remain the same over 5 years?**
**(A) ₹88.89**
**(B) ₹54.95**
**(C) ₹76.68**
**(D) ₹76.10**

**73. Which of the following securities is most liquid?**
**(A) Money Market instruments**
**(B) Capital Market instruments**
**(C) Gilt-edged securities**
**(D) Index futures**

**74. While plotting a graph with risk on X-axis and expected return on Y-axis, a line drawn with co-ordinates (0, $r_f$) and ($\beta$, $r_m$) is called**
**(A) Security Market Line**
**(B) Characteristic Line**
**(C) Capital Market Line**
**(D) CAPM Line**

**75. If the RBI intends to reduce the supply of money as part of anti-inflation policy, it might**
**(A) Lower the bank rate**
**(B) Increase the Cash Reserve Ratio**
**(C) Decrease the SLR**
**(D) Buy Government securities in the open market.**

**76. Which of the following is not an investment constraint?**
**(A) Liquidity**
**(B) The absence of the need for regular income.**
**(C) The preferred time horizon**
**(D) Risk tolerance**

**77. It is given that ₹/£ quote is ₹100.68 – 102.95 and ₹/$ quote is ₹61.86 – 62.87. What would be the $/£ quote? It is given that ₹/£ quote is ₹100.68 – 102.95 and ₹/$ quote is ₹61.86 – 62.87. What would be the $/£ quote?**
**(A) $1.6014-$1.6642(quote)**
**(B) $1.6014-$1.6542(quote)**
**(C) $1.6014-$6352(quote)**
**(D) $1.6014-$6252(quote)**

**78. The theoretical forward price of the following security for 6 months is:**

| | |
|---|---|
| **Spot Price ($S_x$)** | **₹160** |
| **Risk free interest rate** | **9% [Given: $e^{0.045}$ = 1.046028]** |

**(A) ₹166.3645**
**(B) ₹167.4645**
**(C) ₹167.3645**
**(D) ₹166.4656**

**79. A project had an equity beta of 1.3 and was going to be financed by a combination of 30% debt and 70% equity. Assuming debt-beta to be zero, the project beta is :**
**(A) 0.81**
**(B) 0.71**
**(C) 0.51**
**(D) 0.91**

**80. An investor buys a call option contract for a premium of ₹150. The exercise price is ₹15 and the current market price of the share is ₹12. If the share price after three**

**months reaches ₹20, what is the profit made by the option holder on exercising the option? Contract is for 100 shares. Ignore the transaction charges.**
**(A) ₹450**
**(B) ₹350**
**(C) ₹375**
**(D) ₹475**

**81. Mr. X can earn a return of 18% by investing in equity shares on his own. Now he is considering recently announced equity based mutual fund scheme in which initial expenses are 6.70% and annual recurring expenses are 1.7%. How much should the mutual fund earn to provide Mr. X a return of 18 per cent?**
**(A) 22**
**(B) 19**
**(C) 24**
**(D) 21**

**82. CNX Nifty is currently quoting at 9100. Each lot is 75. An investor purchases a May Futures contract at 9200. He has been asked to pay 5% margin. What amount of initial margin is he required to deposit? To what level NIFTY futures should in increase to get a gain of 4%?**
**(A) 9318.4**
**(B) 9218.4**
**(C) 9218.5**
**(D) 9118.4**

**83. P Ltd. has an EPS of ₹75 per share. Its Dividend Payout Ratio is 30%. Earnings and dividends of the company are expected to grow at 6% per annum. Find out the cost of equity capital if its market price is ₹300 per share.**
**(A) 11.5%**
**(B) 12.5%**
**(C) 13.5%.**
**(D) 14.5%**

**84. An investor has three alternatives of varying investment values. The data available for each of these alternatives are given below:**

| Alternative | Expected Return (%) | Standard Deviation of Return |
|---|---|---|
| I | 23 | 8.00 |
| II | 20 | 9.50 |
| III | 18 | 5.00 |

**Which alternative would be the best if coefficient of variation is used?**
**(A) Alternative III is the best as its co-efficient of variation is the lowest**
**(B) Alternative II is the best as its co-efficient of variation is the lowest**
**(C) Alternative I is the best as its co-efficient of variation is the lowest**
**(D) None**

**85. A student ordered a book from USA on 01-05-2018 for $ 90, when the spot rate was ₹68.50/$. Payment was made ten days later, on 11-05-2018 when the book was delivered. By this time, the rupee had appreciated by 10%. How much did it cost the student in Rupees? (Ignore transaction and delivery cost).**
**(A) ₹5304.55**
**(B) ₹5404.55**
**(C) ₹5504.55**
**(D) ₹5604.55**

**86. You are a forex dealer in India. Rates of rupee and pound in the international market are US $0.01386952 and US $1.3181401 respectively. What will be your direct quote of £ (pound) to your customer.**
**(A) ₹54.6987**
**(B) ₹71.1408**
**(C) ₹95.0386**
**(D) ₹0.0105**

**87. 'Bank rate' published by the Reserve Bank refers to**
**(A) the repo rate transacted by RBI**
**(B) the rate at which housing or other long term loans shall be sanctioned by scheduled banks to their customers**
**(C) The rate at which RBI is willing to buy or rediscount bills of exchange or other commercial paper**
**(D) the rate which RBI uses as cut-off for auction of Government securities**

**88. An investor has invested in a mutual fund when the NAV was ₹15.50 per unit. After 90 days the NAV was ₹14.45 per unit. During the period the investor got a cash dividend of ₹1.35 per unit and capital gain distribution of Re. 0.20. The annualized return based on 360 days year count will be**
**(A) 3.23%**
**(B) 12.92%**
**(C) 0.8075%**
**(D) 16.45%**

**89. Initial investment of a project is ₹25 lakh. Expected annual cash flows are ₹6.5 lakh for 10 years Cost of capital is 15%. The annuity factor for 15% for 10 years is 5.019. The Profitability Index of the project will be**
**(A) 1.305**
**(B) 3.846**
**(C) 0.26**
**(D) 0.7663**

**90. Rate of inflation = 5.1%, β = 0.85, Risk premium = 2.295%, Market return = 12%. The real rate of return will be**
**(A) 4.2%**
**(B) 11.70%**
**(C) 6%**
**(D) 5.95%**

**91. In a constant dividend model, the following estimates the difference between the required rate of return and the growth rate:**
**(A) Earnings Retention ratio**
**(B) Leverage ratio**
**(C) Dividend Pay-out ratio**
**(D) Dividend yield ratio**

**92. Presently, a company's share price is ₹120. After 6 months, the price will be either ₹ 150 with a probability of 0.8 or ₹110 with a probability of 0.2. A call option exists with an exercise price of ₹130. What will be the expected value of call option at maturity date?**
**(A) ₹20**
**(B) ₹16**
**(C) ₹12**
**(D) ₹10**

**93. A stock is currently selling at ₹270. The call option to buy the stock at ₹265 costs ₹12. What is the Time Value of the option?**
**(A) ₹5**
**(B) ₹17**
**(C) ₹7**
**(D) None of (A), (B) or (C)**

**94. A Ltd., an export customer requested his banker B to purchase a bill for USD 80,000. Calculate the rate to be quoted to A Ltd. if B wants a margin of 0.08%, given that the inter bank rate is ₹ $ 71.50/10.**
**(A) ₹71.1569**
**(B) ₹71.0431**
**(C) ₹71.5572**
**(D) ₹71.4428**

**95. A company is considering four projects A, B, C and D with the following information:**

| | Project A | Project B | Project C | Project D |
|---|---|---|---|---|
| Expected NPV (Rs) | 60,000 | 80,000 | 70,000 | 90,000 |
| Standard deviation (Rs) | 4,000 | 10,000 | 12,000 | 14,000 |

**Which project will fit the requirement of low risk appetite?**
**(A) Project A**
**(B) Project B**
**(C) Project C**
**(D) Project D**

**96. From the following quotes of a bank, determine the rate at which Yen can be purchased with Rupees.**

| | |
|---|---|
| ₹/£ Sterling | 75.31 – 33 |
| £ Sterling/Dollar ($) | 1.563 – 65 |
| Dollar ($)/Yen (¥) | 1.048/52 [per 100 Yen] |

**(A) ₹124.02**
**(B) ₹142.02**
**(C) ₹412.02**
**(D) ₹214.02**

**97. The spot Value of Nifty is 4430. An investor bought a one month Nifty 4410 call option for a premium of ₹12. The option is:**
**(A) In the money**
**(B) At the money**
**(C) Out of the money**
**(D) Insufficient data**

**98. A certain mutual fund has a return of 17% with standard deviation of 3.5% and the sharpe ratio is 4. The risk free rate is**
**(A) 12.5%**
**(B) 4%**
**(C) 3%**
**(D) 7.5%**

**99. The following information of a project are given below:**

| Expected cash flow (₹) | Probability |
|---|---|
| 6,000 | 0.20 |
| 16,000 | 0.80 |

**If certainty equivalent coefficient is 0.7, what will be certain (Risk less) cash flows of the project?**

**(A) ₹12,000**
**(B) ₹9,800**
**(C) ₹9,000**
**(D) ₹15,400**

**100. The spot and 6 months forward rates of US dollar in relation to the rupee (₹/$) are ₹ 74.532/75.4143 and ₹75.1278/76.2538 respectively. What will be the annualized forward margin (with respect to Ask price)?**
**(A) 2.42%**
**(B) 1.60%**
**(C) 2.23%**
**(D) 2.31%**

**101. B can earn a return of 18% by investing in equity shares on his own. Now he is considering a recently announced equity based Mutual Fund Scheme in which initial expenses are 1% and annual recurring expenses are 2%. How much should be Mutual Fund earn to provide B, a return of 18%?**
**(A) 18.18%**
**(B) 20.18%**
**(C) 22.18%**
**(D) 21%**

**102. You are given the following information of a stock:**

| | |
|---|---|
| Strike Price | ₹400 |
| Current stock price | ₹370 |
| Risk free rate of interest | 5% |

**Theoretical minimum price of a European 6 months put option after six months is**
**(A) ₹9.37**
**(B) ₹20.12**
**(C) ₹30.76**
**(D) ₹20.63**

**103. MS Ltd. is planning to invest in USA. The annual rates of inflation are 8% in India and 3% in USA. If spot rate is currently ₹75.50/$, what spot rate can the company expect after 3 years?**
**(A) ₹65.49**
**(B) ₹79.16**
**(C) ₹87.04**
**(D) ₹72.00**

**104. If the covariance between the returns on a portfolio BC and returns on the market index is 25 and the variance of returns on the market index is 20, what will be the systematic risk of BC under the variance approach?**
**(A) 1.25**
**(B) 1.56**
**(C) 5.45**
**(D) 31.25**

**105. Which of the following investment avenues has the least risk associated with it?**
**(A) Corporate Fixed Deposits**
**(B) Deposits in commercial banks**
**(C) Public Provident Fund**
**(D) Non-convertible zero coupon bonds**

**106. M uses 12% as nominal required rate of return to evaluate its new investment projects. It has recently been decided to protect shareholders interest against loss of**

**purchasing power due to inflation. If the expected inflation rate is 5%, the real discount rate will be**
**(A) 6.67%**
**(B) 6%**
**(C) 17.6%**
**(D) 7%**

**107. A wants to hedge its portfolio of shares worth ₹150 million using the Index futures. The contract size is 100 times the index. The index is currently quoted at 7500. The beta of the portfolio is 0.9. Consider the beta of the index as 1. The number of contracts to be traded is**
**(A) 18000**
**(B) 180**
**(C) 22**
**(D) 200**

**108. The following information is extracted from MF, a mutual fund scheme. NAV on 01-11-2019 is ₹65.78, annualized return is 15%. Distributions of income and capital gains were ₹0.50 and ₹0.30 per unit in the month. What is the NAV on 30-11-2019?**
**(A) ₹67.50**
**(B) ₹66.14**
**(C) ₹65.80**
**(D) ₹66.96**

**109. A portfolio holding 90% of its assets in CNX Nifty stocks in proportion to their market capitalization and 10% in Treasury Bills is more sensitive to**
**(A) Systematic Risk**
**(B) Unsystematic Risk**
**(C) Interest Rate Risk**
**(D) Index Risk**

**110. Project X is to be financed by 40% debt (with zero beta) and balance with equity (with 1.3 beta). If the risk free rate is 13% and return on market portfolio is 22%, the return from the project will be**
**(A) 13.07%**
**(B) 13.70%**
**(C) 24.70%**
**(D) 20.02%**

**111. Z Ltd. invests ₹20 lacs in a project with life 5 years and no salvage value. Tax rate is 50% and straight line depreciation is used. The uniform expected cash flows after tax and before depreciation shield are:**

| Year end | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Cash flows after tax (₹ lacs) | 4 | 5 | 6 | 6 | 7 |

**The payback period is**
**(A) 3 years**
**(B) 3 years and 11 months**
**(C) 2 years and 11 months**
**(D) 2 years and 6 months**

**112. The probability distribution of security N is given below:**

| Probability | Return (%) |
|---|---|
| 0.30 | 30 |
| 0.40 | 20 |
| 0.30 | 10 |

**The risk of the return of the security will be around**
**(A) 60%**
**(B) 8%**
**(C) 20%**
**(D) 24%**

**113. A company's share is currently trading at ₹240. After 6 months, the price will be either ₹250 with probability of 0.80 or ₹220 with probability 0.20. A European call option exists with an exercise price of ₹230. The expected value of call option at maturity date will be**
**(A) ₹10**
**(B) ₹16**
**(C) ₹4**
**(D) ₹14**

**114. The value of beta of a security does not depend on**
**(A) standard deviation of the security**
**(B) standard deviation of the market**
**(C) correlation between the security and the market**
**(D) risk free rate**

## Answer Key:

**(1) (D) 7.95**
P/E Ratio=Payout Ratio/(r-gn) = 0.6(1.06)/(0.14-0.06) = 0.636/0.08 = 7.95

**(2) (A) ₹51.71**
(Expected spot rate a year from now)/ Current spot rate= (1+ Expected inflation on home country)/ (1+ Expected Inflation in foreign country or Expected spot rate of US$ a year hence = (₹50 * 1.06)/1.025 = ₹51.71

**(3) (B) ₹52,00,80,493**
Amount placed in call = ₹52 crores; Interest = 5.65% p.a.
Amount receivable next day = Principal + Interest for a day
=₹52 Crores + 52 crores *(1 /365)*(5.65 /100) = ₹52,00,80,493

**(4) (A) ₹88.51/£**
The rate to be quoted to the importer is the Ask rate = (₹/$) Ask * ($/£)Ask = (₹/$) Ask * (1/(£/$)
Bid = 46.78 x 1/0.5285 = ₹88.51/£

**(5) (C) ₹46.46**
Profit margin of 0.08% is to be deducted from the bid rate.
That is 46.50 x 0.0008 = ₹0.04
Spot bid rate = 46.50 – 0.04 = ₹46.46

**(6) (D) Dividend yield ratio**
As per constant dividend discount model, P=D1/ (k-g), so k-g=D1/P is dividend yield.

**(7) (A) ₹4,00,000**
When Corporate taxes are considered, the value of the firm that is levered would be equal to the value of the unlevered firm increased by the tax shield associated with debt i.e. Value of Levered Firm = Value of unlevered firm + Debt (Tax rate)
Therefore, Value of M Ltd. would exceed the value of P Ltd. by only Debt (Tax rate)
i.e., 0.4 × 10,00,000 = ₹4,00,000

**(8) (B) 2 years 11 months**
Pay-back Period = Cost of Project/Annual Cost Saving = ₹1,42,000/4,00,000 = 2.855 = 2 years 11 months.

**(9) (D) U**
Coefficient of variation = Standard deviation/Expected NPV
Coefficient of variation of X=37947/90000=0.422
Coefficient of variation of Y=44497/106000=0.420

Coefficient of variation of Z= 42163/100000=0.422
Coefficient of variation of U= 41997/90000=0.467
U has highest risk as it has highest coefficient of variation.

**(10)(A) 4.2%**

The annualized premium = [(Forward rate-Spot Rate)/Spot Rate] * [12/ Forward Contract length in months] = 65.90-65/65*12/4 = 4.2%.

**(11)(D) ₹0**

Time value of option is = (Option premium- Intrinsic Value of option) = ₹ [20-(380-350)] = ₹(20-30) = ₹ -10 = 0 (Cannot be negative)

**(12)(B) 2.25**

Beta of the stock of the portfolio is [(1/3*0.75) + (1/3*x) + (1/3*0)] = 1 So, x = 2.25

**(13)(A) 16.3%**

Cost of equity capital as per CAPM approach = 0.07+1.7(0.12-0.07) = 16.3%

**(14)(B) Rupee will be at forward premium if $r_u > r_i$**

Interest Parity = $\frac{F}{S} = \left(\frac{1+r_i}{1+r_u}\right)$

Rupee premium is when spot is more than forward rupee/dollar Forward value is less if $r_i < r_u$ i.e $r_u > r_i$.

**(15)(C) Business Risk**

Business Risk arise from known and controllable factors unique to particular security or industry. Business Risks can be eliminated by diversification of portfolio.

**(16)(B) r = -1 implies full diversification of securities in a portfolio**

Investments offset each other as they move in opposite direction.

**(17)(D) Diversification can minimize the individual portfolio risk.**

Individual securities does not lie on Capital Market Line. A well diversified portfolio does not become risk free and would be subject to considerable variability. The real risk of a security is the market risk which cannot be eliminated.

**(18)(B) ₹452 lacs**

Sum of PV Factors year 2 to 4 @10%= 2.26
Discounted cashflow after tax=400x2.26=904 lacs
Hence, Investment = 904 / 2 = 452 lacs.

**(19)(B)** $\frac{\frac{150}{(1.03)^2}}{(1.1)^2}$

Nominal Cash Flow = 150
P.V. of nominal cash flow = Real Cash Flow = 150/ $(1.03)^2$

P.V. of real cash flow = $\frac{\frac{150}{(1.03)^2}}{(1.1)^2}$

**(20)(D) The firm is leveraged and the debt β is lower than the asset β**

Debt β is lower than equity β. Asset β is the weighted average of debt and equity and it has to be between 1.5 and debt β.

**(21)(C) 39.6**

$\rho_{AB} \times \sigma_A \times \sigma_B = 0.4 \times 9 \times 11 = 39.6$

**(22)(B) 1,152**

Value of the bond = ₹[140 × PVIFA10% 5 year + 1,000 × PVIF10% 5 year]
= 140 × 3.7907 + 1,000 × 0.6209 = 1,151.598 = 1,152

**(23)(C) 3.33**

Treynor's Ratio = $(R_p - R_f)/\beta$ = (13 – 10)/0.90 = 3.33
Where, $R_p$ = Return; $R_f$ = Risk Free Rate of Return; β = Beta

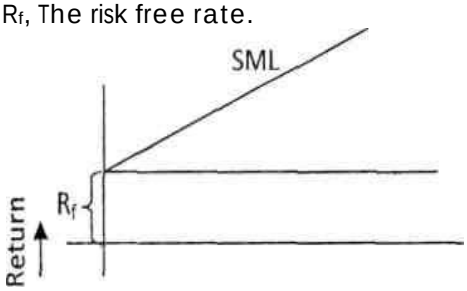
**(24)(A) $ 1.607893**

[Forward Rate / Spot Rate] = [(1 + domestic interest rate)/ (1 + foreign interest rate)]

F/$1.6 = [(1 + 0.0185)/(1 + 0.0135)] = $1.607893

**(25)(D) $R_f$**

$R_f$, The risk free rate.




**(26)(B) 117**

Hedge Ratio = Beta of the portfolio / Beta of the index = 0.8/1.0 = 0.8

Number of contracts to be traded = Portfolio Value × Hedge Ratio ÷ Value of a Futures Contract

Portfolio Value = ₹10 crore

Value of a Futures Contract = 6840 x 100 = ₹6,84,000

No. of Contracts =116.96 = 117

**(27)(C) ₹224**

To recover the call option premium of ₹24, the share price on the date of expiration should rise to (200 + 24) = ₹224.

**(28)(B) 1.75%**

Capital Appreciation = Closing NAV – Opening NAV = ₹20.25 – ₹20 = ₹0.25

Total return = Capital Appreciation + Income + Capital Gain = 0.25 + 0.06 + 0.04 = ₹0.35

Monthly Return = Total Return/Opening NAV = 0.35/20 = 0.0175 = 1.75%

**(29)(A) ₹22**

$P_0 = D_1 /(K_e – g)$ $D_1 = D_0(1+g) = 2(1+0.10) = ₹2.20$

$P_0$ = 2.20 / (0.20 – 0.10) = ₹22.

**(30)(C) ₹161.20**

Theoretical forward price of security of X Ltd. [$F_X$] $= S_x \times e^{rt} = ₹160 \times e^{0.09 \times 0.0833}$

$= ₹160 \times e^{0.0075}$

$= ₹160 \times 1.007528 = ₹161.20$

**(31)(A) 1.42: 1.44**

The rate for $/£ is to be calculated.

The formula is –

$$\$/£ = \frac{Re/£_{bid}}{Re/\$_{ask}} : \frac{Re/£_{ask}}{Re/\$_{bid}} = \frac{94.30}{66.45} : \frac{95.20}{66.25} = 1.4190 : 1.4370$$

Or 1.42 : 1.44

**(32)(B)In call options when strike price is below the price of underlying futures, call option is 'in the money'. In put options, when the strike price is above the price of underlying futures put option 'is in the money'**

**(33)(D) 1.52**

Debt Beta is 0, since it is not given.

Asset beta = Weighted Average Beta of Equity + Weighted Average Beta of Debt

$= [\beta_E \times \text{Equity}]/[\text{Equity} + \text{Debt} \times (1 - \text{tax})] + [\beta_D \times \text{Debt}\ (1 - \text{tax})]/[\text{Equity} + \text{Debt} \times (1\ \text{tax})]$

$= \{(1.40 \times 0.75)/ [\ 0.75 + 0.25 \times (1 - 0.35)]\ \} + 0 = 1.1507.$

Company's Beta $= [\beta_E \times \text{Equity}]/[\text{Equity} + \text{Debt} \times (1 - \text{tax})] + \{[\ \beta_D \times \text{Debt}\ (1 - \text{tax})]/[\text{Equity} + \text{Debt} \times (1 - \text{tax})]\}$

$1.1507\ \beta_E \times 0.67] / [0.67 + 0.33\ (1 - 0.35)] + 0;\ \beta_E = 1.52.$

**(34)(A) 11.43%**

$K_E$ = [Earnings per share / Market price per share] × 100 = [₹20 /₹175] × 100 = 11.43%.

**(35)(C) 0.19**

Sharpe's ratio = $(R_P - R_F) / \sigma$ = [13 -10 ] / 16 = 0.19

**(36)(B) 17.28%**

$B_p$ is to be ascertained as -

= [ $\beta_{equity}$ + E / (D +E) ] + [ $\beta_{debt}$ + E /(D + E)] = (1.30 × 0.70) + (0 × 0.3) = 0.91

Computation of return from the project = $R_F + B_p (R_M - R_F)$ = 0.10 + 0.91 × ( 0.18 - 0.10)

= 0.1728 = 17.28 %.

**(37)(B) ₹80**

$$\text{Market value of Debentures} = \frac{\text{Interest on Debenture}}{\text{Current Yield Rate}} = \frac{12}{0.5} = \text{Rs.}80$$

**(38)(C) 7.5**

$$\text{Degree of Combined leverage} = \frac{\Delta\text{EPS / EPS}}{\Delta\text{Sales / Sales}} = \frac{(38.40 - 9.60) / 9.60}{(28,000 - 20,000) / 20,000} = \frac{3}{40} = 7.5$$

**(39)(A) ₹45,000**

Average sales per day = ₹3.65 lakhs/365 days

Increase in Total Returns = ₹1 lakhs @ 3days × 15% = ₹45,000

**(40)(A) ₹21.47/DM**

TT selling rate = 21.50 (1 – 0.00125) = ₹21.47/DM

**(41)(A) 21.6%**

Rate of return on equity fund = 24% × 0.80 = 19.2

Cost of debt is = 12% × 0.20 = 2.4

Overall rate of return Co. should earn = 21.6

**(42)(A) 1.51**

P.V. of inflows = 6.00 × 5.019 = ₹30.114 lakhs

$$\text{Profitability Index} = \frac{\text{PV of Inflows}}{\text{PV of Outflows}} = \frac{30.114}{20} = 1.51$$

**(43)(B) ₹89,41,680**

P. V. of lease rentals = ₹18 lakhs × PVI FA (12%, 8)

= ₹18 lakhs × 4.9676 = ₹89,41,680

**(44)(A) ₹590**

Margin = (Option premium × 100) + {100 × 0.20 (market value of the share)} – {100 × (Exercise price – market price)} = (2.50 × 100) + {100 × (0.20 × 37)} – 100 × (41 – 37) = ₹590

**(45)(C) ₹300**

Assuming in call option, the total outgo = Premium + Exercise Price = ₹200 + (₹20×100) = ₹2,200.

After 3 months, if the share price is ₹2,500, the net profit = 2,500 – 2,200 = ₹300.

**(46)(B) 20.14%**

Levered beta= 0.8*[1+ (1- 0.35)*(60/40)] = 1.58

Cost of Equity = 7.5 +1.58*8 = 20.14%

**(47)(B) 4.40%**

Forward Margin (premium with respect to Bid Price):

= [(₹41.8550 - ₹40.9542)/ ₹40.9542]*12/6*100

= 0.04399*100=43.99 i. e 4.40% per annum

**(48)(A) 30.56%**

Capital Appreciation = Closing NAV- Opening NAV = 84 - 72 = ₹12.

Return = [Cash Dividend + Capital Appreciation + Capital gain]/Opening NAV.

= [6 + 4 + 12]/72 = 22/72 = 0.3056 = 30.56%

**(49)(A) 12%**

Given, $R_f$ (risk free return) = 6%

$R_m$ (market return) = 16%

$\sigma_m$ (standard deviation of market return) = 20%

$\sigma_g$ (standard deviation of Greaves stock) = 24%

$\rho_{gm}$ (correlation coefficient of Greaves with the market - 0.5

Beta of Greaves stock ($\beta_g$) = $\rho_{gm} * \sigma_g * \sigma_m / (\sigma_m)^2$

= $0.5*0.24*0.20/(0.20)^2$ = 0.6

The required return = $R_f + \beta_g(R_m - R_f)$

= 6% + 0.6(16-6)% =12%

**(50)(A) ₹120000**

3 month interbank rate (ask) with margin= ₹(48.060+0.5350) = ₹48.5950

With exchange, the quote will be ₹48.5950 × 1.00125 = ₹48.66

Profit =₹(48.66 - 48.60)*2m USD = ₹120000.

**(51)(A) 1.5792**

S($/£)= F($/£) *(1 + r$)2 /(1 + r£)2 = 1.61*(1 + 0.03)2 /(1 + 0.04)2 = 1.5792

**(52)(B) 58.33%**

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

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

Leverage=a/(a + b)= 70,00,000/120,00,000 =58.33%

**(53)(C) 660%**

10% increase in Market return resulted in 16% increase in Arihant Ltd. Stock. Thus the Beta (β) for Arihant Ltd. Stock is 1.60(i. e 16%/10%)

Now Systematic Risk is $\beta^2 m^2 = (1.60)^2(257.81) = 659.99\% = 660\%$

**(54)(C) ₹28.41**

Expected rate of Return (CAPM) Re $= R_f + \beta(R_m - R_f)$

=12% + (1.6(15% - 12%) =12% + 4.8% = 16.85%

Price of stock (Dividend Growth Formula)

$R_e = D_1/(P_0+g)$

$0.168 = 2.50/(P_0 + 0.08)$

Or, $0.168 - 0.08 = 2.50/P_0$ Or,

$P_0 = 2.50/0.088 = ₹28.41$

**(55)(A) ₹1,00,000**

Current Ratio = Current Asset/Current Liabilities = 300000 -X/200000-X = 2

Or, (300000 - X) = 2 (200000-X) Or, X =100000 profit @ 0.125%

**(56)(C) ₹28.80**

$K_e$ = 27/150 × 100 = 18%

$K_e$ = DPS / 160 = 18%

∴ DPS = 160 × 18% = ₹28.80

**(57)(B) 3.1%**

If purchasing power parity holds, then the British inflations rate will be:

$$\frac{1.11}{1.09} = \frac{1.05}{1+iB} \text{ Or } iB = \frac{1.09 \times 1.05}{1.11} - 1 = 0.031 \text{or } 3.1\%$$

**(58)(C) 16.72%**

$$\beta = \left[\beta_{equity} x \frac{E}{D+E}\right] + \left[\beta_{debt} x \frac{D}{D+E}\right] = (1.2 \times 0.70) + (0 \times 0.30) = 0.84$$

Required Rate of Return = $R_f + \beta(R_m - R_f)$ = 10% + 0.84 (18%) = 10% + 6.72% = 16.72%

**(59)(A) 0.085%**

$$\text{The \% spread on Euro/Pound} = \frac{1.6557 - 1.6543}{1.6543} \times 100 = 0.085\%$$

**(60)(A) 0.15385**

$$\text{Market value of equity (S)} = \frac{2,40,000 - 72,000(I)}{0.20} = 840000$$

Total value of firm (V) = S + D = 840000 + 720000 = 1560000

$$K_O = \frac{NOI}{V} = \frac{240000}{1560000} = 0.15385$$

**(61) (A) 6.49351**

The price of Swedish krones = $0.14

At 10% appreciation, it will be worth = $0.154

A dollar will buy $\frac{1}{0.154}$ 6.49351 krones tomorrow

**(62)(C) ₹22,84,500**

EBIT to became zero means 100% reduction in EBIT.

Financial Leverage = $\frac{EBIT}{EBT} = \frac{2700000}{2295000} = 1.1764$

Operating Leverage = $\frac{Contribution}{EBIT} = \frac{3300000}{2700000} = 1.2222$

Combined Leverage = 1.1764 × 1.2222= 1.438

Sales have to drop by 100/1.438 = 69.54%

New Sales will be = 7500000 × (1-0.6954) = ₹2284500 (approx)

**(63)(A) 11.26%**

Market Value of equity (S) = (EBIT-1)/ke = (10,000 - 1,400,000)/0.125 = ₹68,800,000

Total value of Firm (V) = S + D = 68,800,000 + 20,000,000 = ₹88,800,000

Overall cost of capital ($K_0$) = (EBIT-1)/V = 10,000,000/88,800,000 = 11.26%

**(64)(C) 0.5824**

To purchase ¥, we need to have a quote of ¥ in terms of `.

We need only the 'ask' quote

Ask (₹/¥) = Ask (₹/£) × Ask (£/$) × Ask ($/¥)

= 81.33 × 0.6498 × 0.01102 = 0.5824

**(65)(C) ₹0.0225**

Re quote : ₹1 = $1/40 = 0.25

If rupee depreciates by 10%, then = 0.025 – 0.0025 = ₹0.0225

**(66)(B) Project Z in full and W in part**

Project Z in full and W in part

All 4 projects have positive NPV. So PI is the selection criteria. Higher the PI, greater is the return for every rupee of investment. Z has highest and W has 2nd highest PI. So, option B is selected.

**(67)(D) ₹ 2,000**

Investor's Profit = (Spot Price – Strike Price – Premium) × No of Contracts × Lot Size

= ₹ (1,240 – 1,195 – 35) × 2 × 100 =

= ₹ 2,000

**(68)(A) A will be cheaper**

Equivalent annual cost of Make – A = 45,00,000 ÷ 6.1446 = ₹7,32,350

Equivalent annual cost of Make – B = 60,00,000 ÷ 7.6061 = ₹7,88,841

**(69)(A) ₹53.09**

BLC Ltd. needs EURO to pay for import.

BLC Ltd. will purchase EUROS.

Hence bank would quote for selling

= (₹65.57 x 0.8057) + (0.5% commission)

= (₹52.83 x 1.005) = ₹53.09/ EURO

**(70)(B) ₹2,28,400**

Pay-back period = Cost of project / Annual cash inflow

So, Cost of project = Annual cash inflow x Pay-back period

= 80,000 x 2.855 = ₹2,28,400

**(71)(B) 18.30%**

We know, BP = [β EQUITY x {E / (D + E)}] + [ β DEBT x {D / (D + E)}]

= (1.4 x 0.75) + (0 x 0.25) = 1.05

Rate of return of the project = $R_p = R_f + B_p (R_m - R_f)$

= 12% + 1.05 (18% - 12%)

= 12%+ 6.30%

= 18.30%

**(72)(C) ₹76.68**

$F = S \times [(1 + r_A)^n / (1+ r_B)^n]$; or, $F(₹/\$) = 60.50 \times [1 + 0.08)^5 / (1+ 0.03)^5]$

= 60.50 x 1.267455 = ₹76.68

**(73)(C) Gilt-edged securities**

Of all securities given, gilt edged securities are considered as most liquid because they are Government bonds and have active secondary market.

**(74)(A) Security Market Line**

Security Market Line simply represents the average or normal trade-off between risk and return for a group of securities where risk is measured typically in terms of the securities betas.

**(75)(B) Increase the Cash Reserve Ratio**

If the RBI intends to reduce the supply of money as part of anti-inflation policy, it might increase bank rate, increase Cash Reserve Ratio, increase SLR, sell Government securities in the open market.

**(76)(B) The absence of the need for regular income**

The investment constraints for investments are liquidity, age, need for regular income, time horizon, risk tolerance and tax liability.

**(77)(A) $1.6014 - $ 1.6642 (quote)**

The synthetic rate for $ / £ is to be calculated. Here, rupee, the price currency (i.e. common currency)is the cheapest among the three currencies involved in the quotes. The formula is:

$ / £ = [(₹/ £bid)/ (₹/ $ask)]: [(₹/ £ask)/ (₹/ $bid)]
= [100.68/ 62.87]: [102.95/61.86]
= 1.6014:1.6642;

So, $/£ = $1.6014 - $ 1.6642 (quote).

**(78)(C) ₹167.3645**

Forward price of securities = ₹160 × $e^{(009)(0.50)}$
= ₹160 × $e^{0.045}$
= ₹160 × 1.046028 = ₹167.3645.

**(79)(D) 0.91**

Bp is to be ascertained as
= [$\beta_{equity}$ + E / (D +E) ] + [ $\beta_{debt}$ + E /(D + E)]
= (1.30 × 0.70) + (0 × 0.3) = 0.91

**(80)(B) ₹350**

Assuming in call option, the total outgo Premium + Exercise Price = 150 + (15 × 100) = ₹1650

After 3 months, if share price is ₹2000, the net profit = 2000 – 1650 = ₹350.

**(81)(D) 21**

Let the return on mutual fund be ₹*x.*

Investors expectation denotes the return from the amount invested.

$$\text{Return from mutual funds} = \frac{\text{Investor's Expectation}}{(100 - \text{Issue Expenses})} + \text{Annual Recurring Expenses}$$

Or $x = \frac{18}{(100-6.7)\%} + 1.7 = 19.29 + 1.7 = 21\%$

Hence, Mutual fund should earn so as to provide a return of 18% = 21%.

**(82)(B) 9218.4**

Initial margin = (5%*9200*75) = 34500
Gain =4%
Return (4% of Initial Margin) = 1380
Return per unit =1380/75 = 18.4
Index value should rise to = 9200 + 18.4 = 9218.4

**(83)(C) 13.5%**

$$K_e = \frac{\text{Dividend per share}}{\text{Market Price per share}} + g(\text{Growth Rate})$$

$$= \frac{75 \times 30\%}{300} + 6\% = 7.5\% + 6\%$$

= 13.5%

**(84)(A) Alternative III is the best as its co-efficient of variation is the lowest**

The Co-efficient of Variation is the ratio of standard deviation to mean.

| Alternative | Expected Return (%) | Standard Deviation of Return | Co-efficient of Variation |
|---|---|---|---|
| I | 23 | 8.00 | 0.35 |

| | | | |
|---|---|---|---|
| II | 20 | 9.50 | 0.48 |
| III | 18 | 5.00 | 0.28 |

**(85)(D) ₹5604.55**

Rupee is appreciating by 10%,

Value of dollar is =68.5/ (1+10%) × 90 = ₹5604.55

**(86)(C) Rs.95.0386**

₹/$ = 1/0.01386952 = Rs. 72.1005 ; $/£ = 1.3181401

₹/£ = 72.1005 x 1.3181401 = 95.0386

**(87)(C) The rate at which RBI is willing to buy or rediscount bills of exchange or other commercial paper**

This is the base rate upon which many other rates are determined. It is a medium term policy rate

**(88)(B) 12.92%**

- 15.50 + 14.45 +1.35 + 0.20 = +0.50

Annualized return = 0.50 / 15.5 x (360/90) = 12.92%

**(89)(A) 1.305**

PI = 6.50 X 5.019 / 25 = 1.305

**(90)(A) 4.2%**

Rf = Real rate + Inflation rate

Risk premium = β(Rm-Rf) 2.295 = 0.85 (12-Rf) 12- Rf= 2.295/0.85 = 2.7 Rf= 12-2.7 = 9.3

Real Rate of return – 9.3 – 5.1 = 4.2%

**(91)(D) Dividend yield ratio**

P = D/(ke-g) Hence, Ke-g = D/P = Dividend Yield ratio

**(92)(B) Rs. 16**

Expected value of call option :

| Expected share price (₹) | Exercise price (₹) | Call value (₹) | Probability | Call option value (₹) |
|---|---|---|---|---|
| 150 | 130 | 20 | 0.8 | 16 |
| 110 | 130 | 0 | 0.2 | 0 |
| | | | | 16 |

**(93)(C) ₹ 7**

**(94) (B) ₹ 71.0431**

A's banker will purchase $ from A and sell in the interbank market. In the interbank market, B is a customer and hence he can sell at only 71.10 while B can purchase in the interbank market at 71.50. Hence, if B sells at 71.10, it has for itself only the margin of 0.08%. Hence it will quote to A 71.10 -.08% x 71.10 for purchasing the $ from A.

i.e. 71.10-0.0569 = 71.0431

**(95) (A) Project A**

Risk per unit of NPV = $\frac{\sigma}{x} = \frac{\text{Std Dev}}{\text{NPV}}$

A = $\frac{4000}{60000}$ = 0.066

B = 0.125

C = 0.17

D = 0.16

Hence A is chosen as least risky relative to NPV.

**(96) (A) ₹124.02**

Yen to be purchased with ₹

75.33 ₹ to purchase 1£

1.565 £ for 1 $

1.052 $ for 100 Yen

₹/100 Yen = 75.33 / 1£ x 1.565£ / 1$ x 1.052 $ / 100 Yen

= 124.02

**(97) (A) In the money**

In an option, only the premium is paid up front, which is ₹12; ₹4,410 is the strike price
Current spot price = 4430 > 4410.
Hence it is in the money.

**(98) (C) 3%**

$\frac{R_P - R_F}{\sigma}$ = Sharpe ratio, $R_P - R_F = \sigma$ x Sharpe Ratio

∴ $R_F = R_P - \sigma$ x Sharpe Ratio
= 17% – 3.5% × 4
= 17 – 14
= 3%

**(99) (B) ₹9,800**

(Expected cash flow with risk) = [6,000 × .2 + 16,000 × .8]
Certainty adjusted = [6,000 × .2 + 16,000 × .8] × .7
= 9,800

**(100) (C) 2.23%**

Ask price diff = 76.2538 – 75.4143
= 0.8395
6 m margin = 0.8395 ÷ 75.4143 × 100%
Annualised = 0.8395 ÷ 75.4143 × 100% × 2
= 2.23%

**(101) (B) 20.18%**

= 18 ÷ 99% + 2%
= 18.18 %+ 2%
= 20.18%
[Initially, only 99% is available for investment]

**(102) (B) ₹20.12**

Spot price today = 370; Strike price = 400
= 400 × $e^{-5\% \text{ x} \frac{6}{12}}$
= 400 × $e^{\frac{-0.05}{2}}$
= 400 × $e^{-.025}$
= $\frac{400}{1.02532}$
= 390.12
Put option value = 390.12 – 370
= 20.12

**(103) (C) ₹87.04**

75.50 will become (75.50) $(1.08)^3$ = 75.50 ×1.26
= 95.10
1$ will become $(1.03)^3$ = 1.09

Expected rate = $\frac{95.10}{1.092}$
= 87.04

**(104) (D) 31.25**

Sys. risk = $\beta^2$ *port folio* x $\sigma_m^2$; $\beta = \frac{25}{20} = 1.25$
= $(1.25)^2$ x 20
= 31.25

**(105) (C) Public Provident Fund**

The other three are subject to only capital adequacy norms and the funds can be invested freely to fetch returns commensurate with the risk. PPF is required to invest only in specified risk free securities.

**(106) (A) 6.67%**

$$\text{Real Rate} = \frac{(1+\text{nominal rate})}{(1+\text{inflation rate})} - 1 \text{ or } \frac{(1+\text{nominal rate})}{(1+\text{inflation rate})} = 1+\text{Real Rate}$$

Real rate = (1.12/1.05) – 1 = 1.0667 – 1 = 6.67%

**(107) (B) 180**

Value per future contract = 7500 × 100 = ₹7.5 lacs
Value of portfolio = 1500 lacs
Hedge ratio = 0.9/1 = 0.9
No. of futures contracts to be traded = Value of portfolio x hedge ratio/ value per contract.
= 0.9 × 1500/7.5 = 180 contracts.

**(108) (C) ₹ 65.80**

Monthly return = 1.25% = (NAV – 65.78 + 0.5 + 0.3)/65.78
0.82225 = NAV – 64.98
NAV = 65.80225
= 65.80

**(109) (A) Systematic Risk**

Unsystematic risk is eliminated since the portfolio follows the index. Only 10% is invested in T Bills and therefore the portfolio is not too much affected by interest rate risk. Systematic risk is the market risk which is replicated by the portfolio.

**(110) (D) 20.02%**

Project beta = 0.4 x 0 + 0.6 x 1.3 = 0.78
$R_p = R_f + \beta_p (R_m – R_f)$
= 0.13 + 0.78 (0.22 – 0.13)
= 0.13 + 0.78 × 0.09
= 0.13 + 0.0702
= 0.2002
= 20.02%

**(111) (C) 2 years and 11 months**

CFAT, depn shield = 6,7,8,8,9 For years 1,2,3,4,5.
Cum flows = 6, 13, 21, 29, 38
Pay back = 2 years + 7/8 × 12 = 2 +10.5
= 2 years and 11 months

**(112) (B) 8%**

| Probability Pi | Return Xi | xi - 20 | $(xi - 20)^2$ | Pi $(xi - 20)^2$ |
|---|---|---|---|---|
| 0.3 | 30 | +10 | 100 | 30 |
| 0.4 | 20 | 0 | 0 | 0 |
| 0.3 | 10 | -10 | 100 | 30 |
| | | Mean = 0 | | 60 |

Variance = 60
Std deviation = $\sqrt{60}$ = 7.746% = 8%

**(113) (B) ₹16**

If price is 250, option is exercised and profit = 250 – 230 = 20. Probability = 0.8
If price is 220, option lapses and profit = 0.
Expected value = 20 × 0.8 + 0 × 0.2 = 16

**(114) (D) risk free rate**

$\beta = r\ \sigma_y/\sigma_m$ where r is correlation coefficient, $\sigma_y$ is standard deviation of security and $\sigma_m$ is the standard deviation of market. Hence beta is independent of risk free rate.

# Notes

Behind every successful business decision, there is always a CMA

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