VALUATION AND PORTFOLIO MANAGEMENT
MAKE UP QUIZ

Time: 45 minutes **Max. Marks 30**

Each question carries 2 marks

1. An analyst gathered the spot rates given below. The one-year forward rate (in %) two years from now is (answer rounded off to the nearest whole number):

Time (years)	Annual Spot rates
1	15%
2	10%
3	12%
4	7.5%

Ans 16%
$(1.12)^3 = (1.10)^2(1+r)$

2. The expected return for asset A is 15% and the standard deviation of returns is 32% for asset B the expected return is 9% with a standard deviation of 23%. The correlation between the fund returns is 0.15. What is the standard deviation (in %) of the minimum variance portfolio? Round off your answer to the nearest whole number

Ans 10%

3. Consider two stocks, A and B. Stock A has an expected return of 10% and a beta of 1.2. Stock B has an expected return of 14% and a beta of 1.8. The expected market rate of return is 9% and the risk-free rate is 5%. Between A and B the better security offers an excess return of _____ % (answer to one decimal place)

Ans 1.8%

4. What is the standard deviation (in %) of a portfolio of two stocks given the following data: Stock A has a standard deviation of 18%? Stock B has a standard deviation of 14%. The portfolio contains 40% of stock A, and the correlation coefficient between the two stocks is -0.23. Round off the answer to the nearest whole number

Ans 10% (actual answer 9.72%)

5. A benchmark index has three stocks priced at Rs.23, Rs.43, and Rs.56. The number of outstanding shares for each is 350,000 shares, 405,000 shares, and 553,000 shares, respectively. If the market value weighted index was 970 yesterday and the prices changed to Rs.23, Rs.41, and Rs.58, what is the new index value?

Ans 975

6. Based on 5 years of monthly data, you get the following information for the companies listed. Compute the ratio of beta coefficient for stock A and beta coefficient of Stock B. (2 decimal places). i.e. [Beta value of A/Beta value of B]

Company	σ_i	$r_{i,M}$
A	11%	0.72
B	13.75%	0.30
C	7.60%	0.55
D	10.20%	0.60
Index	5.50%	1.00

Ans 1.92

7. You pay Rs. 21,600 to the Dhandapani Fund, which has a NAV of Rs.18 per share at the beginning of the year. The fund deducted a front-end load of 4%. The securities in the fund increased in value by 10% during the year. The fund's expense ratio is 1.3% and is deducted from year-end asset values. What is your rate of return on the fund if you sell your shares at the end of the year?

$$\left[\frac{(21{,}600)(0.96)(1.10)(1-.013)}{21{,}600}\right]-1 = 4.23\%$$

8. A firm is expected to produce earnings next year of $3 per share. It plans to reinvest 25% of its earnings at 20%. If the cost of equity is 11%, what should be the value of the stock?
A portfolio generates an annual return of 16%, a beta of 1.2, and a standard deviation of 19%. The market index return is 12% and has a standard deviation of 16%. What is Jensen's alpha of the portfolio if the risk-free rate is 6%?

g = .25 × .20 = .05
D_1 = $3(1 - .25) = $2.25
P_0 = $2.25/(.11 - .05) = $37.50

Jensen measure = .16 - [.06 + 1.2(.12 - .06)] = .028

9. At the end of July, the average yields on 10 top-rated corporate bonds and 10 intermediate-grade bonds were 7.65% and 8.42%, respectively. At the end of August, the average yields on 10 top-rated corporate bonds and 10 intermediate-grade bonds were 6% and 6.71%, respectively. The confidence index _____ during August, and bond technical analysts are likely to be _____.

A) Increased; bullish
B) Increased; bearish
C) Decreased; bullish
D) Decreased; bearish

$$\text{CI(July)} = \frac{.0765}{.0842} = 0.91$$

$$\text{CI(August)} = \frac{.0600}{.0671} = .89$$

Since the confidence index decreased, this would be considered a bearish signal.

10. On day 1, the stock price of Motor Ltd was Rs12 and the automotive stock index was 127. On day 2, the stock price of Motor Ltd was Rs.15 and the automotive stock index was 139. Consider the ratio of Motor Ltd. to the automotive stock index at day 1 and day 2. Motor Ltd. is _____ the automotive industry, and technical analysts who follow relative strength would advise _____ the stock.

A) outperforming; buying
B) Outperforming; selling
C) Underperforming; buying
D) Underperforming; selling

$$\text{Day 1 Ratio} = \frac{12}{127} = .09449$$

$$\text{Day 2 Ratio} = \frac{15}{139} = .107914$$

Since the ratio is increasing, the relative strength of Ford is improving; it is outperforming and should be bought.

11. On a particular day, there were 920 stocks that advanced on the NSE and 723 that declined. The volume in advancing issues was 80,846,000, and the volume in declining issues was 70,397,000. The trin ratio is _____, and technical analysts are likely to be _____.

A) 90; bullish
B) 90; bearish
C) 1.11; bullish
D) 1.11; bearish

$$\text{Trin} = \frac{\frac{70,397,000}{723}}{\frac{80,846,000}{920}} = 1.11$$

12. Suppose that in 2020 the expected dividends of the stocks in a broad market index equaled Rs.240 million when the discount rate was 8% and the expected growth rate of the dividends equaled 6%. Using the constant-growth formula for valuation, if interest rates increase to 9%, the value of the market will change by what percentage?

$$\text{Original value} = \frac{240}{.08-.06} = 12{,}000 \text{ Million}$$

$$\text{New value} = \frac{240}{.09-.06} = 8{,}000 \text{ Million}$$

$$\%\Delta = \frac{8{,}000-12{,}000}{12{,}000} = -33.33\%$$

13. The underlying asset of a Rs.55 call is trading at Rs.48. This call would be considered...

A) In-the-money.
B) At-the-money.
C) Out-of-the-money.

Ans C

14. What is the intrinsic value of a Rs.30 put option if the underlying asset is trading at Rs.23?

Rs. 7

15. A certain underlying asset is trading at Rs.50. A Rs.42 call is trading in the marketplace for Rs.10. What is the time value of the option?

Rs.2