IV Semester M.B.A. Degree Examination, November 2022
(CBCS – 2014-15 and Onwards)
MANAGEMENT
Paper – 4.2.1 : Investment Analysis and Management

Time : 3 Hours

Max. Marks : 70

SECTION – A

Answer **any five** of the following. **Each** question carries **five** marks.　　　(5×5=25)

1. Discuss the factors that differentiate the investors from the speculators and gamblers.

2. 'Changes that occur in the interest rate and purchasing power affect the bonds return more than the stock return'. Discuss.

3. Discuss the different trends given in the Dow theory.

4. A portfolio consists of 4 securities 1, 2, 3 and 4. The proportions of these securities are : $w_1 = 0.3$, $w_2 = 0.2$, $w_3 = 0.2$ and $w_4 = 0.3$. The standard deviations of returns on these securities (in percentage terms) are : $\sigma_1 = 5$, $\sigma_2 = 6$, $\sigma_3 = 12$ and $\sigma_4 = 8$. The correlation coefficients among security returns are : $\rho_{12} = 0.2$, $\rho_{13} = 0.6$, $\rho_{14} = 0.3$, $\rho_{23} = 0.4$, $\rho_{24} = 0.6$ and $\rho_{34} = 0.5$. What is the standard deviation of portfolio return ?

5. The rate of return on the stock of XYZ Technologies and on the market portfolio for 6 periods has been as follows :

Period	Return on the stock of XYZ Technologies (%)	Return on the market portfolio (%)
1	16	14
2	12	10
3	−9	6
4	32	18
5	15	12
6	18	15

   i) What is the beta of the stock of XYZ Technologies ?
   ii) Establish the characteristic line for the stock of XYZ Technologies.

P.T.O.

6. The following information is given.

Expected return for the market = 15%

Standard deviation of the market return = 25%

Risk free rate = 8%

Correlation coefficient between stock A and the market = 0.8

Correlation coefficient between stock B and the market = 0.6

Standard deviation for stock A = 30%

Standard deviation for stock B = 24%

   i) What is the beta for stock A ?

   ii) What is the expected return for stock A ?

7. Assume the CAPM with risk free lending but no risk free borrowing. The return on the market portfolio is 10% and the return on the zero beta portfolio is 6%. The market standard deviation is 30%. Complete the following table.

Security	Expected Return	Standard Deviation	Beta	Residual Variance
X	0.15	-	-	0.0375
Y	0.10	-	-	0.0775

SECTION – B

Answer **any three** questions. **Each** question carries **10** marks. **(3×10=30)**

8. Explain Sharpe Index Model. How it is different from the Markowitz model ?

9. Explain CAPM theory and its validity in the stock market.

10. Stock X and Y display the following returns over the past three years.

Years	Returns	
	X	Y
2019	14	12
2020	16	18
2021	20	15

   a) What is the expected return on a portfolio made upto 40% and 60% of Y ?

   b) What is the Standard deviation of the stock ?

   c) Determine the correlation coefficient of stock X and Y.

   d) What is the portfolio risk made up of 40% of X and 60% of Y ?

11. The following data are given for X and Y companies stocks and Bombay Sensex for a period of 1 year. Calculate the systematic and Unsystematic risk for the companies stocks. If an equal amount of money is allocated for the stocks what would be the portfolio risk ?

	X Stock	Y Stock	Sensex
Average return	0.15	0.25	0.07
Variance of return	6.20	5.76	2.45
Beta	0.70	0.26	-
Correlation co-efficient	-	0.456	-

SECTION – C

Compulsory question.   (1×15=15)

12. Case study :

Mr. Nitin Gupta had invested Rs. 8 million each in Ashok Exports and Biswas Industries and Rs. 4 million in Cinderella Fashions, only a week before his untimely demise. As per his will this portfolio of stocks were to be inherited by his wife alone. As the partition among the family members had to wait for one year as per the terms of the will, the portfolio of shares had to be maintained as they were for the time being. The will had stipulated that the job of administering the estate for the benefit of the beneficiaries and partitioning it in due course was to be done by the reputed firm of Chartered Accountants, Talwar Brothers. Meanwhile the widow of the deceased was very eager to know certain details of the securities and had asked the senior partner of Talwar Brothers to brief her in this regard. For this purpose the senior partner has asked you to prepare a detailed note to him with calculations using CAPM, to answer the following possible doubts.

What is the expected return and risk (standard deviation) of the portfolio ? What is the scope for appreciation in market price of the three stocks are they overvalued or undervalued ?

You find that out the three stocks, your firm has already been tracking two viz. Ashok Exports (A) and Biswas Industries (B) their betas being 1.7 and 0.8 respectively. Further, you have obtained the following historical data on the returns of Cinderella Fashions (C) :

Period	Market return (%) Cinderella Fashions	Return on (%)
1	10	14
2	5	8
3	2	6
4	1	4
5	5	10
6	8	11
7	10	15

On the future returns of the three stocks, you are able to obtain the following forecast from a reputed firm of portfolio managers.

State of the Economy	Probability	Returns (in percentage)				
		Treasury Bills	Ashok Exports	Biswas Industries	Cinderella Fashions	Sensex
Recession	0.3	7	5	15	10	2
Normal	0.4	7	18	8	16	17
Boom	0.3	7	30	12	24	26

1) Calculate the beta of Cinderella Fashions stock from the historical data.

2) Calculate the expected returns, standard deviations and covariance's.

3) Calculate the covariances between the stocks.

4) Determining overpricing and under pricing using CAPM.