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M.P. Birla Institute of Management LIBRARY

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III Semester M.B.A. (Day & Evening) Degree Examination, May/June - 2025

MANAGEMENT

Investment Analysis and Portfolio Management

(CBCS 2019 onwards Scheme)

Paper : 3.2.1

Time : 3 Hours **Maximum Marks : 70**

SECTION - A

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

1. How does systematic risk affect the individual stock return? How is it measured?
2. Explain the Markowitz diversification.
3. The following information is extracted from the MF bulletin.

Mutual fund	Standard deviation
A	14
B	21
C	18
D	20

Risk free rate is 6%, Return on Market portfolio is 16%, standard deviation of the market is 18%, determine the CML returns of the above mutual funds and also rank them.

4. A portfolio consists of 2 securities, A and B. The proportions of these securities are :

Security	Weight	Standard deviation
A	0.4	15%
B	0.6	18%

Correlation coefficient between the two securities 0.3. Find out the standard deviation of the portfolio.

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5. Mr. Azad holds the following portfolio.

Stock	Beta	Amount Invested
Alpha	0.6	Rs.3,00,000
Beta	1.0	Rs. 1,80,000
Carrot	1.2	Rs. 1,20,000

What is the expected rate of return on his portfolio, using CAPM if the risk - free rate is 6 percent and the expected return on market portfolio is 15 percent?

6. The probability distribution of rate of return on Alpha stock is given below

State of economy	Possible rate of return	Probability
Boom	25	0.4
Normal	12	0.3
Recession	-6	0.3

What is the standard deviation of return?

7. The following table provides the details about 3 portfolios. Find out the difference between the actual and expected return using Jensen index. Based on your calculation rank them.

Portfolio	Return on portfolio	Portfolio beta	Risk free interest rate
1	15	1.3	6%
2	12	0.9	6%
3	18	1.6	6%
Market index	11	1.0	6%

SECTION - B

Answer any **Three** of the following questions. Each question carries **10** marks.**(3×10=30)**

8. The following table provides the α and β values for the stocks for the period January 2024-November 2024.

Stock	α	β
TISCO	-2.06	0.71
Tata Tea	-1.5	0.92
Bajaj Auto	1.15	0.58
ITC Hotels	1.45	1.15

If the market return is assumed to be 15 percent, what will be the portfolio return for an investor who invests amount of money in the above mentioned stocks?

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9. The return of two assets in four possible states of nature are given below :

State of the nature	P	Return on security	Return on security 2
1	0.2	-5	10
2	0.3	15	12
3	0.4	18	14
4	0.1	22	18

a. What is the σ of return on asset 1 and asset 2

b. What is the covariance between the returns on asset 1 & 2.

c. What is the co-efficient of correlation between the return on asset 1 and 2.

10. The period rates of return on stock and the market portfolio for 10 year period are given below :

Period	Return on stock A	Return on market portfolio (%)
1	10	12
2	6	5
3	13	18
4	-4	-8
5	13	10
6	14	16
7	4	7
8	18	15
9	24	30
10	22	35

What is the beta for stock A?

Fit a security characteristic line from the above data.

11. Write short notes on

1. Relative strength index
2. Biases and errors that inhibit rational decision making of Investors.

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SECTION - C

12. Case study. **(1×15=15)**

(Compulsory)

The following data has been extracted from stock market.

No.	Stock name	Expected Return	Unsystematic Risk	Beta
1	ACC	5.00	25.00	0.50
2	ZEE	25.00	20.00	2.50
3	ITC	15.00	10.00	1.00
4	SAIL	10.00	10.00	1.50
5	PTC	20.00	18.00	1.80

a) Using sharpe model portfolio optimization, construct the optimum portfolio out of the given securities assuming $R_f = 7\%$ and $\sigma_m^2 = 25\%$.

b) Briefly explain sharpes single index model.

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