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**CMS 556**

**Fourth Semester M.Com. Degree Examination, September/October 2022
(CBCS)
(Regular and Repeaters)
COMMERCE
Optional (FMAIS) : Portfolio Management**

Time : 3 Hours

Max. Marks : 70

SECTION – A

Answer **any four** questions :**(10×4=40)**

1. Discuss the Pros and Cons of Capital Asset Pricing Model (CAPM).
2. Mr. X owns a portfolio composed of three securities. The portfolio has the following characteristics.

Security	β	Standard Deviation of random error term (σ_{ei})	Proportion
X	1.4	6%	0.3
Y	1.25	9%	0.5
Z	0.80	3%	0.2

If the σ of the market index is 20% what is the total risk of X's Portfolio. Calculate also the risk of each security.

3. A financial analyst is analyzing two investment alternatives of Z and Y. The estimated rates of return and their chances of occurrence for the next year are given in the table below.

Probability of Occurrence	Rates of Return	
	X	Y
0.20	22%	5%
0.60	14%	15%
0.20	-4%	25%

P.T.O.



- a) Determine the each alternative expected rate of return, variance and standard deviation.
 - b) Is Y comparatively riskless ?
 - c) If the financial analyst wishes to invest half in Z and another half in Y, would it reduce risk ? Explain the reason for it.
4. You are attempting to construct an optimum portfolio and during the holding period the return on market is 13.5% with the market variance of 25%. The risk free rate is 7%. The following securities are under reviewed.

Stock	α	β	Residual variance
A	3.72	0.99	9.35
B	0.60	1.27	5.92
C	0.41	0.96	9.79
D	-0.22	1.21	5.36
E	0.45	0.75	4.52

5. Discuss the Dollar weighted and time weighted measures of return. Also explain formula plans with suitable examples.
6. The required return on the market portfolio is 12%. The beta of stock X is 2. The required return on the stock is 18%. The expected dividend growth on stock X is 5%. The price per share of stock X is 30. What is the expected dividend per share of stock X next year ?

What will be the combined effect of the following on the price per share of stock X ?

- a) The inflation premium increased by 2%.
- b) A decrease in the degree of risk a version reduces the differential between its return on the market portfolio and the risk free return by 1/3.
- c) The expected growth rate of dividend stock X decreases to 4%.
- d) The beta of stock X falls to 1.8.



7. Mr. A owns a portfolio with the following characteristics (assume that returns are generated by a one factor model).

Security	Factor Sensitivity	Proportion	Expected Return
A	2.0	0.20	20%
B	3.5	0.40	10%
C	0.5	0.40	5%

Mr. A decides to create an arbitrage portfolio by increasing the holdings of security A by 0.20.

- i) What must be the weights of the other two securities in Mr. A's arbitrage portfolio ?
- ii) What is the expected return on the arbitrage portfolio ?

SECTION – B

Answer **any two** questions. **Each** question carries **15** marks. Answer to theory question should **not** exceed **eight** pages. **(2×15=30)**

8. Following are the deviations, betas and average rates of return of several managed portfolio are given along with the standard deviation and average rate of return of the market index. The beta of the index is assumed to be 1. Further assume the T-bills rate average 7% during the time period performance measurement. Compare these funds on performance using the Sharpe, Treynor and Jensen measures.

Fund	Average Return	Standard Deviation	Beta
A	0.15	0.25	1.25
B	0.12	0.30	0.75
C	0.10	0.20	1.00
RM	0.12	0.25	1.00



9. Consider the data given below.

Security	R_i Return	Standard Deviation
A	20%	5%
B	5%	15%
C	35%	1%

Covariance Matrix

	A	B	C
A	1.0	0.01	-0.2
B	0.01	1.0	0.7
C	-0.2	0.7	1.0

Compute the risk and return of the portfolio consisting of A,B and C assuming equal rates.

10. Write a short note on the following

- a) CAPM and APT
- b) Efficient portfolio
- c) Capital Market Line and Security Market Line.
