Reg. No. | | | | | | | | | |

Paper CM 555 A

Fourth Semester M.Com. Degree Examination, May 2013
COMMERCE
Optional – I : Financial Management and Investment Science (FMAIS)
Security Analysis and Portfolio Management – II

Time : 3 Hours Max. Marks : 70

SECTION – A

Note : 1) Answer **any four** questions.
2) **Each** question carries **10** marks.
3) Answer to **each** theory question should **not** exceed **four** pages. **(4x10=40)**

1. What is CAPM ? What are its assumptions ? Explain its validity in the Indian stock market.

2. Assume that two securities constitute the market portfolio. These securities have the following expected returns, standard deviation and proportions.

Security	Expected Returns	Standard Deviation	Proportion
A	10%	20%	.40
B	15%	28%	.60

Based on this information and given correlation of 0.3 between the two securities and a risk free rate is 5%. Specify the equation for the capital market line.

3. Explain different types of option contracts. Discuss the various factors affecting prices of options.

P.T.O.

4. Consider a three month call option on ABC Company's stock with an exercise price of Rs. 45. If ABC is currently selling at Rs. 50 and the risk-free interest rate is 5%, what will be the price of the option ? Apply the Black-Scholes model to find call option value by assuming the standard deviation of the rate of return of ABC stock to be 0.4.

5. What do you mean by 'Portfolio Revision' ? Discuss the Dollar weighted and Time weighted measures of return.

6. X owns a portfolio of two securities. Based on a two factor model, the two securities have the following characteristics.

Security	Zero Factor	Factor 1 Sensitivity	Factor 2 Sensitivity	Non Factor risk σ^2 ei	Proportion
A	2%	.30	2.0	196	0.70
B	3%	.50	1.8	100	0.30

The factors are uncorrelated. Factor 1 has an expected value of 15% and a S.D. of 20%. Factor 2 has an expected value of 4% and a S.D. of 5%. Calculate the expected return and S.D. of X's portfolio.

7. Write a short note on the following :
   a) SML and CML.
   b) Futures and Forward contracts.

SECTION – B

Note : 1) Answer **any two** questions.
2) **Each** question carries **fifteen** marks.
3) Answer to **each** theory question should **not** exceed **eight** pages. **(2×15=30)**

8. Mr. A wants to purchase either portfolio C or D. He has collected annual rate of return data for the years 2001-2011 for both these portfolio, the market represented BSE index and the risk free rate. Determine the following for C and D portfolios.
   a) Sharpe's Index performance
   b) Treynor's performance measure

c) Jensen's performance index.

Years	Portfolio C (%)	Portfolio D (%)	Measure Market %	Risk Free Rate (%)
2001	23	12	24	9
2002	– 48	– 6	– 20	9
2003	– 20	– 8	– 31	12
2004	39	15	42	13
2005	33	22	29	11
2006	34	11	– 12	10
2007	29	6	11	10
2008	48	6	23	12
2009	47	7	37	15
2010	8	8	– 10	16
2011	55	33	25	20

9. Mr. X owns a portfolio with the following characteristics.

Securities	Expected return	Factor 1 Sensitivity	Factor 2 Sensitivity	Proportion
1	15%	0.9	0.2	.25
2	21%	3	1.5	.25
3	12%	1.8	0.7	.25
4	8%	2	3.2	.25

Assume that the returns are generated by a two factor model. Mr. X decides to create an arbitrage portfolio by increasing the holding of security 1 by 0.10.

a) What must be the weights of the other three securities in X's Portfolio ?

b) What is the expected return on the arbitrage portfolio ?

10. The following table gives information with regard to Ten securities.

Security Number	Mean Return	Beta	Unsystematic Risk σ^2 ei
1	15	1.5	50
2	17	1.2	40
3	12	1.1	25
4	18	2	40
5	10	1.2	30
6	14	1.2	20
7	15	1.3	40
8	11	1.0	20
9	9	.8	16
10	8	.75	10

The risk free rate has been 7% and the market risk $\left(\sigma_m^2\right)$ has been 10%. From the above information you are required to determine the Sharpe's optimal portfolio and the cut off rate.