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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Fourth Semester, Master of Business Administration (MBA)

Semester End Examination; May/June - 2018

Portfolio Management

Time: 3 hrs *Max. Marks: 100*

***Note**: i) Answer all **FOUR** full questions from **PART - A** and **PART - B** (Case study) is compulsory.*
ii) Scientific calculators are allowable.

PART - A

1 a. What is CAPM? List the assumption of CAPM. 10

b. The returns of two assets under four possible states of nature are given below:

State of Nature	Probability	Return on Asset 1 (%)	Return on Asset 2 (%)
1	0.1	5	0
2	0.3	10	8
3	0.5	15	18
4	0.1	20	26

10

i) Calculate the standard deviation for each stock

ii) What is the covariance between the returns on asset 1 and 2

iii) What is the coefficient of correlation between the returns on asset 1 and 2

OR

2 a. Explain the various systematic and unsystematic risks involved in investment. 10

b. The ALL Ltd stock returns and the market return over 10 years is as below:

Year	1	2	3	4	5	6	7	8	9	10
ALL Ltd. Return (%)	15	10	8	10	12	18	20	15	24	15
Market Return (%)	5	8	10	7	5	5	7	7	5	5

10

Calculate the beta for the ALL Ltd.

3 a. Explain the various phases of portfolio management. 10

b. The stock price of A and B is 50 and 70 respectively. The rupee returns of both the stock for the next year is as follows:

Economic Condition

	High Growth	Low Growth	Stagnation	Recession
Probability	0.3	0.3	0.2	0.2
Stock A return	45	50	60	75
Stock B return	90	80	70	60

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Calculate the expected return and standard deviation of each stock and what is portfolio return and risk, if equally invested?

Contd…2

OR

4 a. What is portfolio revision? Write about active and passive portfolio strategy. 10

b. Using the CAPM, estimate the approximate required rate of return for the stocks, given the following information that market index is expected to have a return of 0.20 and a variance of 0.20. If the portfolio is created by investing in equal proportion what will be the portfolio risk and return? 10

Stock	α	β	σ_{ei}^2
X	0.07	1.52	0.19
Y	0.09	0.81	0.06
Z	-0.02	1.10	0.15

5 a. Write a note on different types of mutual fund. 10

b. Consider a portfolio of four securities with the following charactertics:

Security	Weight	α_i	β_i	Residual Variance σ_{ei}^2
1	0.2	2	1.2	320
2	0.3	1.7	0.8	450
3	0.1	-0.8	1.6	270
4	0.4	1.2	1.3	180

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Calculate the return and risk of the portfolio under single index model. If the return on market index is 16.4 per cent and the standard deviation of return on market index is 14 per cent.

OR

6 a. Explain the Sharpe index mode. How does it differ from the Markowitz model? 10

b. Given the three portfolio in the tables with expected return and sensitivity factors b_{e1} and b_{e2} What is the equation of the plane in R_i, b_{e1} and b_{e2} space defined by these portfolios?

Portfolio	R_i	b_{e1}	b_{e2}
A	14	0.8	0.8
B	10.8	0.6	0.4
C	11.2	0.4	0.6

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7 a. What is mutual fund? Discuss the roles of various entities in mutual fund operation. 10

b. The following information available regarding the three mutual funds and the market

	R_p(%)	σ_p	β
Birla Advantage	25.38	4.00	0.23
ICICI Growth	36.28	6.86	0.52
Sundaram Growth	45.56	4.31	0.63
Nifty	36.74	3.69	1.00

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The risk free rate of index is assumed to be 9%. Rank the above funds using Sharpe, Jensen and Treynor measures.

Contd…3

OR

8 a. What is the behavioral finance? Explain the important Heuristic driven biases and cognitive errors that impair judgment. 10

b. The following data are availagle to you as a portfolio manager

Security	Return	Expected beta	Standard Deviation
A	0.32	1.7	0.5
B	0.3	1.4	0.35
C	0.25	1.1	0.4
D	0.22	0.95	0.24
E	0.20	1.05	0.28
F	0.14	0.7	0.18
XYZ composite index	0.12	1	0.20
T-Bills	0.08	0	0

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In terms of security market line, which of the securities listed above are the undervalued and why?

Assume that a portfolio is constructed using equal portions of the six stock listed above. What will be the expected return and risk on such a portfolio?

PART - B (Case Study) Compulsory

9. Construct the optimal portfolio using sharpe single index model from the following data:

a) Risk free rate – 5%

b) Market return – 20%

c) Market Value – 10

Security	R_i	$R_i - R_f$	β_i	σ_{ei}^2	$(R_i - R_f)/\beta_i$
1	15	10	1	50	10
2	17	12	1.5	40	8
3	12	7	1	20	7
4	17	12	2	10	6
5	11	6	1	40	6
6	7	2	0.8	16	2.5
7	5.6	0.6	0.6	6	1

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