Name:

Enrolment No:

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, May 2019

Course: MBA Core-Finance **Semester: II**

Program: Investment Analysis and Portfolio Management **Time: 03 Hours**

Course code: FINC 7021 **Max. Marks: 100**

Instructions: Attempt all Questions

SECTION A **(2*10=20)**

		Marks	**CO**
Q 1	Multiple choice Questions		
I	On the capital market line a) All efficient and inefficient portfolio b) Only the efficient portfolio c) All the efficient portfolios and securities d) All portfolios and securities	**2**	**3**
II	The stock above the security market line is a) Overpriced b) Underpriced c) Appropriately priced d) Of high risk	**2**	**3**
III	According to efficient market theorists the stock price a) moves in trend b) each successive change depends on the previous one c) price movements creates patterns d) each successive change does not depends on the previous one	**2**	**2**
IV	The price earnings ratio of the stock reflects a) Growth of the company b) Earnings retained and invested in the company c) Dividend pay-out for the company’s stock d) Market mood for the company’s stock	**2**	**3**
V	Sell Reliance X company shares at Rs 60. This order is a a) best rate order b) limit order c) discretionary order	**2**	**2**

<table>
<tr><td></td><td>d) stop loss order</td><td></td><td></td></tr>
<tr><td>VI</td><td>The Problem with Markowitz model is that the number of covariances have to be estimated. For example, a portfolio of 30 stocks, the covariances that have to be estimated are.
a) 300
b) 350
c) 435
d) 450</td><td>2</td><td>2</td></tr>
<tr><td>VII</td><td>Company X has a beta of 1.5. The expected return is 15% and the risk free rate of interest is 5%. What is the market return.
a) 6.67%
b) 10.33%
c) 15.66%
d) 12.33%</td><td>2</td><td>2</td></tr>
<tr><td>VIII</td><td>Risk lover’s utility curves have
a) Positive slope
b) Negative slope
c) Convex to origin
d) Negative slope and convex to origin</td><td>2</td><td>3</td></tr>
<tr><td>IX</td><td>Mr. Kartik purchased treasury bills since
a) He wants to maximize returns
b) The returns are certain
c) Minimum variance in returns
d) There is assurance of full payment</td><td>2</td><td>3</td></tr>
<tr><td>X</td><td>An investor has a portfolio with the combination of stocks and bonds in the ratio of 75:25. He is
a) Risk averse
b) Risk neutral
c) Risk taker
d) Active in portfolio management</td><td>2</td><td>3</td></tr>
<tr><td colspan="4">SECTION B (5*4=20)</td></tr>
<tr><td></td><td></td><td>Marks</td><td>CO</td></tr>
<tr><td>Q 2</td><td>What are the steps involved in the traditional approach to portfolio construction. Explain the constraints in formulation of objectives.</td><td>5</td><td>1</td></tr>
<tr><td>Q 3</td><td>Define Markowitz Diversification. Explain the statistical methods used by Markowitz to reduce risk.</td><td>5</td><td>2</td></tr>
<tr><td>Q 4</td><td>The following parameters apply to stock Y and Z:
<table><tr><td></td><td>Stock Y</td><td>Stock Z</td></tr><tr><td>Expected Return</td><td>20</td><td>30</td></tr><tr><td>Expected Variance</td><td>16</td><td>25</td></tr><tr><td>Covariance</td><td>16</td><td>25</td></tr></table>
Is there any advantage of to hold a combination of Y and Z?</td><td>5</td><td>3</td></tr>
<tr><td>Q 5</td><td>What is Beta? Is it a better measure of risk than standard deviation?</td><td>5</td><td>3</td></tr>
</table>

SECTION-C(Attempt Any Two) **(15*2=30)**

Q 6 (Marks: **15**, CO: **2,3**)

Corporation X and Y present the following expected risk and return for the coming year.

- Rx = 15% Variance =16%
- Ry = 18% Variance = 25%
- rxy = 0.6
- The portfolio risk (standard deviation) for a portfolio of 50% in each asset is 4.03. Determine the correlation coefficient that will be necessary to reduce the level of portfolio risk by 75%. What is the expected return of the equally weighted portfolio?

Q 7 (Marks: **15**, CO: **3**)

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

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

a) Determine expected rates or return, variance, and standard deviation of Y and Z
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?

Q 8 (Marks: **15**, CO: **3,4**)

Explain the nature of portfolio risk if two securities have
a) A perfect positive correlation
b) A perfectly negative correlation
c) Have zero correlation
Illustrate your answer with diagram.

SECTION-D **(30*1=30)**

Q 9 (Marks: **30**, CO: **3,4**)

An investor received Rs 1 million from his pension fund. He wants to invest in the stock market. The treasury bill rate is 7% and the market return variance is 20. The following table gives details regarding the expected return, beta and residual variance of individual security. What is the optimum portfolio assuming no short sales?

Company	R_i	β	σ^2_{ei}
A	20	0.75	25

B	18	1.3	16	
C	16	1.3	16	
D	12	0.75	16	
E	10	0.6	9	
F	15	1.8	36	

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SECTION A **(2*10=20)**

		Marks	**CO**
Q 1	Multiple choice questions		
I	The efficiency frontier becomes a straight line throughout because of the a) Introduction of risk-free rate b) Introduction of lending c) Introduction of lending and borrowing d) Introduction of risky assets	**2**	**2**
II	The security market line's first point is a risk free asset with a beta of zero and the second point on the line is one with a beta of a) 1 b) 1.5 c) 2 d) 0.5	**2**	**3**
III	Market imperfections may lead to a) overpriced b) underpriced c) appropriately priced d) of high risk	**2**	**3**
IV	The problem with the Markowitz model is that a number of covariances have to be estimated. For example for a portfolio of 30 stocks, the covariances that have to be estimated are a) 300 b) 350 c) 435 d) 450	**2**	**2**

V	To adopt the Sharpe index model for a portfolio of 40 stocks, the number of bits of information one needs are a) 80 b) 100 c) 120 d) 122	**2**	**3**
VI	The relationship of stock X's return with the stock index return is given by its correlation coefficient being 0.8. What is the percentage of variation explained by the index? a) 80 b) 64 c) .60 d) 20	**2**	**2**
VII	Markowitz approach has roots in a) Good portfolio management b) Proper entry and exit in the market c) Estimation of stock return d) Analysing the risk and return to stocks	**2**	**2**
VIII	Risk in the purchase of Infosys and Satyam stocks will be eliminated when a) r = + 0.2 b) r = - 1 c) r = 0 d) r = 0.1	**2**	**2**
IX	The spot price of a stock is Rs 20 and the risk free interest rate is 10 %. Which of the following is the future price of the stock with simple interest calculations. a) 21 b) 23 c) 22 d) 24	**2**	**3**
X	Market imperfections may lead to a) Lower SML b) Higher SML c) Band of SML d) Non-linear SML	**2**	**2**
SECTION B			**(5*4=20)**
Q 2	Distinguish between the security market line and capital market line.	**5**	**2**
Q 3	Q3: Explain CAPM theory and its validity in the stock market.	**5**	**2**
Q 4	Assume that the risk free rate of return is 7 percent. The market portfolio has an expected return of 14 % and a standard deviation of return of 25 %. Under the	**5**	**2**

	equilibrium conditions as described by CAPM, what would be the expected return for a portfolio having no unsystematic risk and 20 % standard deviation of return?		
Q 5	Consider two situations: Kirtiraj is a young professional in his 20's and Bhaskar is another young man in his late 30's. Assume both earn same amount of money. Bhaskar has a family, a house, a car and all other trappings of a married life. Both wish to invest in securities. What would be there constraints and objectives according to traditional approach to portfolio construction.	**5**	**2**
	SECTION-C		**(15*2=30)**
Q 6	An investor wants to build a portfolio with the following four stocks. With the given details, find out his portfolio return and portfolio variances. The investment is spread equally over the stock.	**15**	**4**

Company	α	β	Residual variance
Infosys	0.17	0.93	45.15
Satyam	2.48	1.37	132.25
Oracle	1.47	1.73	196.28
IBM	2.52	1.17	51.98

Market Return (Rm) = 11
Market Return Variance = 26

Q 7	Assume you are a portfolio manager. Based on the following details, determine the securities that are overpriced and those that are underpriced in terms of the SML.	**15**	**3**

Security	Actual Returns	β	Σ
A	0.33	1.7	0.50
B	0.13	1.4	0.35
C	0.26	1.1	0.40
D	0.12	0.95	0.24

		E	0.21	1.05	0.28		
		F	0.14	0.70	0.18		
		Nifty index	0.13	1.00	0.20		
		T-bills	0.09	0	0.0		

Q 8	What are the basic assumptions of CAPM model? What are the advantages of adopting the CAPM model in portfolio management.	**15**	**3**
	SECTION-D		**(30*1=30)**
Q 9	Mr. David is constructing an optimum portfolio. The market return forecast says theta it would be 13.5% for the next two years with the market variance of 10%. The risk free rate of return is 5%. The following securities are under review. Find the optimum portfolio.	**30**	**3,4**

Company	α	β	σ_{ei}^2
Anil	3.72	0.99	9.35
Avil	0.60	1.27	5.92
Bow	0.41	0.96	9.79
Viril	-0.22	1.21	5.39
Billy	0.45	0.75	4.52