

Name:

Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2018

Course: Financial Economics
Programme: B. A. Energy Economics

Time: 03 hrs.

Instructions: Questions in Section A & D is compulsory.

Answer any four questions from Section-B and two questions from Section-C.

Semester: III
CC:ECON 2002

Max. Marks: 100

SECTION A

S. No.		Marks	CO
Q 1	Classify the following items under the appropriate category – Whether Money Market (MM) or Capital Market (CM) i. RBI and Government are participants ii. Regulated by SEBI iii. Tenor of instruments is usually less than a year iv. Treasury Bills v. Commercial Papers vi. Zero Coupon Bonds vii. Equity Shares viii. Debentures ix. Commodity derivatives x. Nifty futures	10	CO 1
Q 2	A forward contract is an agreement between two entities to buy or sell the underlying asset at a future date, at today's pre-agreed price. a) True b) False	2	CO 1
Q 3	When the futures price of a commodity appears underpriced in relation to its spot price, an opportunity for _____ arbitrage arises. a) reverse cash and carry b) cash and carry	2	CO 1
Q 4	_____ work at making profits by taking advantage of discrepancy between prices of the same product across different markets. a) Arbitragers b) Speculators c) Exchange d) Hedgers	2	CO 1

Q 5	<p>A trader sells 5 units of gold futures at Rs.16500 per 10 grams. What is the value of his open short position? Unit of trading is 1 Kg and delivery unit is one Kg.</p> <p>a) Rs. 82,500 b) Rs.82,50,000 c) Rs.8,25,000 d) Rs.82,000</p>	2	CO 5																											
Q 6	<p>The total number of outstanding contracts (long/short) at any point in time is called</p> <p>a) Hedge Limit b) Transaction Charge c) Delivery Lot d) Open Interest</p>	2	CO 1																											
SECTION B																														
Q 7	<p>Calculate the expected return of an asset from the following table.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">State of economy</th> <th style="width: 33%;">Probability</th> <th style="width: 33%;">Return (%)</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>0.10</td> <td>-8</td> </tr> <tr> <td>B</td> <td>0.20</td> <td>10</td> </tr> <tr> <td>C</td> <td>0.40</td> <td>8</td> </tr> <tr> <td>D</td> <td>0.20</td> <td>5</td> </tr> <tr> <td>E</td> <td>0.10</td> <td>-4</td> </tr> </tbody> </table>	State of economy	Probability	Return (%)	A	0.10	-8	B	0.20	10	C	0.40	8	D	0.20	5	E	0.10	-4	5	CO 1									
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Q 8	<p>Suppose that there are two asset with $\bar{r}_1 = 12, \bar{r}_2 = 15, \sigma_1 = 20, \sigma_2 = 18$ and $\sigma_{12} = .01$. A portfolio is formed with weights $w_1 = .25$ and $w_2 = .75$. Calculate the mean and variance of the portfolio.</p>	5	CO 3																											
Q 9	<p>Define systematic and unsystematic risks. Give examples of both.</p>	5	CO 1																											
Q 10	<p>Explain the security market line (SML) with the help of a figure. How does it differ from the capital market line?</p>	5	CO 2																											
Q 11	<p>What do you mean by basis risk? Explain the reasons behind it.</p>	5	CO 1																											
SECTION-C																														
Q 12	<p>Calculate beta from the following data.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Year</th> <th style="width: 33%;">Return on Security j</th> <th style="width: 33%;">Return on Market Portfolio</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>10</td> <td>12</td> </tr> <tr> <td>2</td> <td>6</td> <td>5</td> </tr> <tr> <td>3</td> <td>13</td> <td>18</td> </tr> <tr> <td>4</td> <td>-4</td> <td>-8</td> </tr> <tr> <td>5</td> <td>13</td> <td>10</td> </tr> <tr> <td>6</td> <td>14</td> <td>16</td> </tr> <tr> <td>7</td> <td>4</td> <td>7</td> </tr> <tr> <td>8</td> <td>18</td> <td>15</td> </tr> </tbody> </table>	Year	Return on Security j	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	15	CO 4 & 5
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	9	24	30											
	10	22	35											
Q 13	What is an option? What is the difference between a call option and a put option? Illustrate your answer with the help of position diagrams.			15	CO 1 & 2									
Q 14	What are the factors that influence the prices of options on share? Explain how increase in the risk-free rate and decrease in volatility can make an American put attractive if it is exercised early?			15	CO 1 & 3									
SECTION-D														
Q 15	i. Explain carefully the meaning of term cost of carry. What is the relationship between future price, spot price, convenience yield and cost of carry ?			15	CO 4									
	ii. (Two correlated assets) the correlation ρ between asset A and B is .1 and other data is given in the table ahead:			15	CO 5									
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Asset</th> <th style="text-align: center;">\bar{r}</th> <th style="text-align: center;">σ</th> </tr> </thead> <tbody> <tr> <td>A</td> <td style="text-align: center;">10.0</td> <td style="text-align: center;">15%</td> </tr> <tr> <td>B</td> <td style="text-align: center;">18.0</td> <td style="text-align: center;">30%</td> </tr> </tbody> </table>					Asset	\bar{r}	σ	A	10.0	15%	B	18.0	30%
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	a) Find the proportions of α and $1 - \alpha$ of B that define a portfolio of A and B having minimum standard deviation.													
	b) What is the value of this minimum standard deviation?													
	c) What is the expected return of this portfolio.													