Name: **Enrolment No:**	UPES UNIVERSITY OF TOMORROW

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2022

Course: MBA OG **Semester: III**
Programme: Financing Petroleum Sector Projects **Course Code: FINC 8015**
Time: 03 hrs. **Max. Marks: 100**
Instructions: Scientific Calculator is allowed

SECTION A
10Qx2M=20Marks

S. No.	**Multiple Choice Questions**	**Marks**	**CO**
Q 1	Using Margin Call in Futures, Clearing House reached to a. Initial Margin b. Maintenance Margin c. No Margin d. Margin Refund	**2**	**1**
Q 2	FMEA is defined as a. Fault and Modified Effort Analysis b. Fault and Managed Effort Analysis c. Future and Modified Effort Analysis a. Failure Modes and Effects analysis	**2**	**1**
	Differentiate the Following:		
Q 3	Call and Put Option	**2**	**1**
Q4	Forward and Futures Contract	**2**	**1**
	Fill in the Blanks		
Q 5	Certainty Equivalent Value range between ……	**2**	**1**
Q 6	Conditions of Risk are ……	**2**	**1**
Q 7	Business risk refers to ……..	**2**	**1**
Q 8	Private Placement Refers to ……	**2**	**1**
Q 9	Hierarchical structure comprising of task and sub task Analyzing risks (determine likelihood, consequence, urgency, and customer priorities and preferences and determine risk handling priorities) is called as……	**2**	**1**
Q 10	An iterative process to identify, assess, reduce, accept, and control risks in a systematic, proactive, comprehensive and cost effective manner, taking into account the business, costs, technical, quality and schedule programmatic constraints is called as……	**2**	**1**

SECTION B

4Qx5M= 20 Marks			
Q 11	" Risk can be minimized to zero in case of Perfectly Negatively Correlated Returns" Critically Examine the statement?	**5**	**2**
Q 12	Growing level of uncertainty and Risk, causing all firms facing wavering and non deterministic future. All groups and corporations resort to effective risk management, either formal or informal, depending on the size of the organization. Effective Risk Management is getting attention in the corporate world. It requires very specialized organization approach and skills to implement and handle the risk management process. Without Risk Management it would be very difficult to survive in the competitive world. The firms are resorting to number of practices to manage the risk. ,Based on this, discuss the various approaches and steps involved in the risk management function in Oil and Gas Sector Projects	**5**	**2**
Q 13	Comment on the following with respect to present scenario: a. Phases of Project Life Cycle b. Process of Financial Markets **OR** How do energy companies open up their digital twin datasets to unlock the creativity that the technology giants are going to capture with their more open platforms and manage the risk?	**5**	**3**
Q 14	A project costs Rs. 150 to initiate. After one year it could return Rs. 130 with probability of 0.70 or Rs. 90 with probability 0.30. If Rs. 130 return materialized then there is a 0.40 chance of a Return of Rs. 120 and a 0.60 chance of return of Rs. 70 after 2 years. If the return of Rs. 90 occurred in the first year then the return in year 2 may by Rs. 130 with a probability of 0.50 and Rs. 100 with probability 0.50. Assuming the cost of capital to be 10%, Find the Coefficient of Variation after making Decision Tree. **OR** How Decision Tree Analysis can be used for assessment of risk and project selection decision?	**5**	**3**

SECTION-C
3Qx10M=30 Marks

Q 15	You are undergoing contract to buy 300 bbl of crude oil . The current price is $ 88.71 per barrel from Jai Petroleum Limited on 4th Nov 2022. Initial Margin is 5% and Maintenance Margin is 3%. The expiry date of contract is 19th Nov 2022. The client has hired you as his financial consultant to let him know about the following: 1. MTM position 2. Margin money which he shall pay or receive to the bank on account of such MTM.	**10**	**3**

Date	Market Rate
4th Nov 2022	91.75
5th Nov 2022	92.35
7th Nov 2022	87.5
9th Nov 2022	86.5
10th Nov 2022	81.5
11th Nov 2022	90.75
12th Nov 2022	92.75
14th Nov 2022	89.75
15th Nov 2022	88.25
16th Nov 2022	85.25
17th Nov 2022	90.75
18th Nov 2022	88.25
19th Nov 2022	86.25

<table>
<tr>
<td>Q 16</td>
<td>The TLC Company has developed the following data.
<table>
<tr><th>State (s)</th><th>Probability (pj)</th><th>Market Return (RM)</th><th>Security return (Rj)</th></tr>
<tr><td>1</td><td>0.10</td><td>-0.10</td><td>-0.20</td></tr>
<tr><td>2</td><td>0.20</td><td>0.20</td><td>0.15</td></tr>
<tr><td>3</td><td>0.10</td><td>0.25</td><td>0.30</td></tr>
<tr><td>4</td><td>0.40</td><td>0.10</td><td>0.15</td></tr>
<tr><td>5</td><td>0.20</td><td>0.20</td><td>0.20</td></tr>
</table>
Calculate:
a. The expected return on the security.
b. The variance and standard deviation of the security returns.
c. The covariance of the security returns with the market returns.</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Q 17</td>
<td>How Sensitivity and Scenario Analysis can be used in assessing Risk for Oil and Gas Projects
OR
How company will assess risk (Standard Deviation)? Which Project company will choose using Sensitivity Analysis ?
<table>
<tr><th></th><th>Project X (‘000 Rs.)</th><th>Project Y(‘000 Rs.)</th><th>Probability</th></tr>
<tr><td>Initial Cash Outlay (t=0)</td><td>160</td><td>160</td><td></td></tr>
<tr><td>Cash Flow Estimates (t=1-15)</td><td></td><td></td><td></td></tr>
<tr><td>Worst</td><td>24</td><td>0</td><td>0.25</td></tr>
<tr><td>Most Likely</td><td>32</td><td>32</td><td>0.50</td></tr>
<tr><td>Best</td><td>40</td><td>64</td><td>0.25</td></tr>
<tr><td>Required Rate of Return</td><td>9%</td><td>9%</td><td></td></tr>
<tr><td>Economic Life (in Years)</td><td>15</td><td>15</td><td></td></tr>
</table></td>
<td>10</td>
<td>4</td>
</tr>
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SECTION-D
2Qx15M= 30 Marks

<table>
<tr>
<td>Q 18</td>
<td>The following information of Toyota Ltd is available to you for your perusal:

The present book value capital structure is as follows:

Rs. In Lakh
<table>
<tr><td>Equity Capital</td><td>200</td></tr>
<tr><td>15% Preference Capital</td><td>120</td></tr>
<tr><td>Retained Earnings</td><td>50</td></tr>
<tr><td>13% Debentures</td><td>130</td></tr>
<tr><td>15% Loan</td><td>200</td></tr>
<tr><td></td><td>700</td></tr>
</table>
Anticipated external financing opportunities are:

(i) Rs 1000 per debenture redeemable at par; 5 year maturity,13% coupon rate , Premium @12% (Lump Sum), The Corporate tax rate is 30%.

(ii) Rs 1000, 15% preference shares redeemable at par: 6 years maturity, Discount @ 12% ,floatation Cost is 3%. Dividend Tax is 5%

(iii) Equity shares are sold at Rs.40 . Expected Dividend is Rs. 18 per share . Growth Rate is 10%

You are required to determine the weighted average cost of capital using the book value weights</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>Q 19</td>
<td>Read the case and answer the following questions:

Currency Futures is a ready shaver to make the contract more hedged and attractive investment. It will protect the investor like a mothers' womb.

This study attempts to bring out the relevant aspects and need associated with the introduction of currency futures in India. An attempt has also been made to analyze the present trends prevailing in the currency futures and the future forecast. Currency futures are contracts to buy or sell one currency (only dollar rupee as of now) against another at a specified price and date in the future. It is a type of financial futures</td>
<td>15</td>
<td>4</td>
</tr>
</table>

contract where the underlying is the currency exchange rate. It gives the holder the right to buy or sell in contrast to the option contract which gives the holder the right, but not the obligation to buy or sell the underlying asset. Therefore, both the parties to the futures contract must fulfill their novation on the settlement date.

In the early 1990's number of structural reforms embarked India in the foreign exchange market. Economies were not fully integrated and the rupee was partially convertible. Number of barriers existed which restricted the international finance and trade. Due to this liberalization and globalization- the two important terms for international trade came into picture. India had a pegged exchange rate regime which was made partially floated in March 1992 and fully in march 1993, seeing the impact of south East Asian crisis. The economies suffered and the pressure on their exchange rates mounted to such an extent that the countries had to give up the peg to the dollar and float their currencies. Thus an important step was taken by the RBI towards current account convertibility which was achieved in august 1994. These issues attracted a great deal of interest from policy makers and investors. Recent step had been taken by the RBI towards capital account convertibility i.e. rupee is on a urge to be made fully convertible which will increase the scope of the international finance and trade and thus foreign exchange market in India.

The rupee has been convertible on the current account since 1994 which implies it can be converted into foreign currency for only trade specific transactions like imports, remittances of interest etc. if required. However, it is not convertible on capital account which means local assets cannot be freely moved into foreign assets and vice versa. Thus RBI currently has a five year plan to move towards full capital account convertibility which prolongs till 2011.

In lieu of this, Recent development by the RBI along with securities and exchange board of India (SEBI) for the launch of currency futures has taken place on august 6, 2008. This has been viewed as a welcome move towards further integration of the Indian financial markets with the global markets. Excessive volatility in the foreign exchange market due to interest rate and exchange rate fluctuations forced RBI on April 20, 2007 to move for issuing guidelines on the usage of foreign currency forwards, swaps and options in the OTC market. At the same time advantages of introducing currency futures was also explored. Thus the report of the internal working group of RBI was submitted in April 2008, recommending the introduction of exchange traded currency futures.

Further currency futures has been introduced for the hedging purposes allowing only residents of India to take positions and thus helps traders and investors in undertaking their economic activity and minimizing their exposures. *For e.g. A person invests $200,000 abroad for a year when $1 = Rs.43. If his investments yield 20 per cent*

	returns in a year thereby making $ 40,000 or Rs. 17.2 lakhs in rupee terms. However, if the dollar weakens to Rs. 40, the returns would fall to Rs. 16 lakhs thus a loss of Rs. 1.2 lakhs. But if the person had sold a 12-month futures contract at the spot price of Rs. 43 amounting to $200,000 and the dollar did fall to Rs.40, he could cover the transaction by buying the dollar and make good the loss incurred in the international market. *The upfront payment will be 1.75 per cent of $ 200,000 i.e. $3500. Supposing if rupee weakens to say 45, the losses in the future market would be made up by profits in the international market. This is how the investor is hedged against both a rise and fall in currency thereby ensuring safe returns.* Q (i): Briefly outline the Summary of the Case------**5 Marks** Q (ii) Considering the Above mentioned Case, Mention the Basic Characteristics in Currency Futures ------**5 Marks** Q (iii) Briefly discuss the application of the futures in the given example in the case---**5 Marks**		