



Name:

Enrolment No:

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, May 2022

Course: Commodity Trading and Risk Management

Program: B Com (Hons) BMI

Course Code: FINC2059

Semester: IV

Time : 03 hrs.

Max. Marks: 100

Instructions:

SECTION A
10Qx2M=20Marks

S. No.		Marks	CO
1	A member is also required to contribute to a fund? A) Initial B) Maintenance C) Default D) Emergency	2	CO1
2	The party that has agreed to sell hasposition. A) Short B) Long C) Swap D) Parity	2	CO1
3	Which of the following is not an input in fiduciary call and protective put. A) St B) d1 C) Co D) Po	2	CO1
4	C_1^{-cc} is computed using- A) Fiduciary call B) Protective put C) Risk free rate D) Option payoff	2	CO1
5	European option prices can computed using- A) Synthetic probabilities B) Black-Scholes-Merton Method C) Binomial pricing D) Straddle	2	CO1
6	Lognormal distribution of return is an assumption in A) Put call parity B) Protective put C) BSM Model D) Binomial pricing method	2	CO1
7	Daily margin cash flows are referred to as which of the following margin.	2	CO1

	<p>A) Initial margin B) Maintenance margin C) Variation margin D) Total margin</p>		
8	<p>Synthetic probabilities are used to compute only long put option prices and not short put option prices. A) True B) False</p>	2	CO1
9	<p>Arbitrage reduces risk in financial markets. A) False B) True</p>	2	CO1
10	<p>Arbitrage, speculation, and gambling are same. A) True B) False</p>	2	CO1
SECTION B 4Qx5M= 20 Marks			
11	<p>Explain any two the trading strategies used by traders in derivatives markets.</p>	5	CO2
12	<p>Mention the margin requirements of future contracts.</p>	5	CO2
13	<p>If the spot price of gold is INR 51,100 and risk free rate is 4%. Compute the future price of gold 120 days from today.</p>	5	CO2
14	<p>Contrast long put and short call options position in derivatives market.</p>	5	CO2
SECTION-C 3Qx10M=30 Marks			
15	<p>Hedge ratio helps to eliminate some portion of the risk in financial markets, do you agree? Show the process to compute hedge ratio for a trader who holds a long position in Energy.</p>	10	CO3
16	<p>You are given with the following equation. $h = p_1^{+i} - p_1^{-i} e^{-i t} \frac{S_1 - S_2}{S_1 - S_2}$ Explain the process to derive h given in above equation.</p>	10	CO3
17	<p>You have to compute the prices of American put option on a commodity. You are given the spot price of commodity as INR 800. The risk free rate is 4%. The exercise price for 90 days from today is INR 810. Standard deviation of commodity's prices is 2.50 and the variance of the volatility is 4.35. Time to maturity is 90 days. Compute the option price using BSM framework. (e = 2.718)</p>	10	CO3
SECTION-D 2Qx15M= 30 Marks			

18	<p>The spot price is INR 500 and spot price 180 days from today is INR 540. The exercise price of call and put options is INR 555 and INR 538 respectively. Call option premium is INR 12 and put options premium is INR 8. Compute the pay from long call and short put position.</p> <p style="text-align: center;">OR</p> <p>Explain the process to compute option prices using the technique that assumes long normally returns and state your assumptions clearly.</p>	15	CO4
19	<p>The stock price of IBM today is INR 1200, the risk free rate is 4%. The exercise price of call option on IBMs' stock is INR 1215. Time to maturity of this contract is 120 days. The exercise price of put option on stock is INR 1235. The risk free bond is available at a face value of INR 1000.</p> <p>Show your calculations for the put-call parity for IBMs' stock and options.</p>	15	CO4