

<b>Name:</b>	
<b>Enrolment No:</b>	

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

<b>Course: BBCF 139 Commodities</b>	<b>Semester: V</b>
<b>Programme: BBA-FAS</b>	
<b>Time: 03 hrs.</b>	<b>Max. Marks: 100</b>
<b>Instructions:</b>	

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

**Note: Choose the appropriate option in each question. Each question carries 2 marks.**

S. No.		Marks	CO
Q 1			
i.	Which of the following is not an example of financial derivative: a) Options based on Nifty50 b) Futures based on share of Infosys c) Options based on Sensex d) None of the above	2	2
ii.	Which of the following is not an example of commodity derivative: a) Futures based on Gold b) Futures based on Copper c) Options based on Sensex d) None of the above	2	1
iii.	In the context of commodities, TOCOM stands for: a) Tokyo Commodity Exchange b) Toronto Commodity Exchange c) Tokyo Metal Exchange d) Turkish Commodity Exchange	2	1
iv.	In the context of commodities, NSPOT stands for: a) NCDEX Spot Exchange Ltd. b) National Spot Exchange Ltd. c) New Delhi Spot Exchange Ltd. d) NCDEX Super Exchange Ltd.	2	1
v.	Arbitrage is primarily done by those who want to: a) Earn riskless profit b) Cover their risk c) Earn high returns by taking extra risk d) Diversify their risk	2	4
vi.	Which of the following is the clearing house of MCX? a) MCXCCL b) Commodity Clearing Corporation	2	1

	c) MCCL d) NCCL		
vii.	Call option gives the buyer of the option a: a) Right to buy b) Right to sell c) Right to receive premium d) Right to but as well as sell	2	2
viii.	Which of the following is an index of NCDEX? a) Karma b) Krishi c) Commo d) None of the above	2	1
ix.	Which of the following is not true? a) Forward contracts are standardized but futures are not b) Futures are standardized but forwards are not c) MCX is a commodity exchange d) LME is a commodity exchange	2	2
x.	Which of the following is the regulator of commodity exchanges in India? a) SEBI b) RBI c) Commodity Exchanges Development and Regulatory Authority of India d) AMFI	2	1

**SECTION B**  
**(5\*4=20 Marks)**

**Note: Attempt any four questions. Each question carries 5 marks.**

Q2.	What do you mean by the term 'Standard Portfolio Analysis of Risk'? Explain with the help of suitable examples.	5	5
Q3.	Explain cost of carry model of pricing of future contracts.	5	2
Q4.	Briefly explain the pay-off diagrams for the buyer as well as seller of a future contract.	5	2
Q5.	What do you mean by the term 'Arbitrage'? Differentiate between arbitrage and speculation with the help of suitable example.	5	4
Q6.	What do you mean by the terms 'clearing' and 'settlement' in the context of trading of commodity derivatives? Briefly explain the mechanism of clearing and settlement at NCDEX.	5	5
Q7.	Chinmay has purchased a put option based on Gold with a strike price of Rs. 29,000 at a premium of Rs. 250. What will be the cash flow and the profit to him if the current market price of Gold is: i. Rs. 30,000 ii. Rs. 28,500	5	5

**SECTION-C**  
**(10\*3=30 Marks)**

**Note: Attempt any three questions. Each question carries 10 marks.**

Q8.	Explain the pay-off and profit & loss positions in following situations with the help of appropriate diagrams and formulae:	10	2
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	a. Long Call b. Short Call c. Long Put d. Short Put		
Q9.	Briefly explain the regulatory framework of commodity exchanges in India. Also list out two important Indian and two important foreign commodity exchanges.	10	5,1
Q10.	What are commodity derivatives? Explain with examples. Explain various types of orders that can be placed while trading in derivatives.	10	1,5
Q11.	What is NCDEX? List out important commodities traded on NCDEX platform. Also explain various types of members at NCDEX in brief.	10	1
Q12.	Differentiate between in-the-money, out-of-the-money and at-the-money options.  Which of the following options (based on NIFTY) are in-the-money, out-of-the-money, and at-the-money if the current value of NIFTY is 11450?  (i) NIFTY 27-December-2018 CE 11350 being traded at a premium of ₹ 205/-. (ii) NIFTY 31-January-2019 CE 11350 being traded at a premium of ₹ 248/-. (iii) NIFTY 28-February-2019 CE 11350 being traded at a premium of ₹ 277/- (iv) NIFTY 27-December-2018 PE 11350 being traded at a premium of ₹ 35/-. (v) NIFTY 31-January-2019 PE 11350 being traded at a premium of ₹ 53/-. (vi) NIFTY 28-February-2019 PE 11350 being traded at a premium of ₹ 72/-.  Also calculate intrinsic value and time value of each option.	10	2

**SECTION-D**  
**(30 Marks)**

**Note: Read the case thoroughly and answer the questions given after the case.**

Q13.	<p>In January 2009, oil prices ruled at below \$50 a barrel on the NYMEX after having peaked in July to touch \$147 a barrel. Most airline companies that had placed hedges because of fear that oil would go to \$200 per barrel were caught on the wrong foot. Merrill Lynch estimated that nine major Asian airline carriers alone would have \$3.8 billion in future hedging losses for 2008. Moreover, since their hedges extended into the first half of 2009, if oil prices continued to rule low, losses could be expected in 2009 also. Of course, rallying oil prices could make the same hedges look good again. Aviation Turbine Fuel (ATF), simply called fuel, is the largest item of expense for all big airline companies. In the early 1990s, the companies assumed that they could pass along fuel price increases by increasing fares. However, growing competition forced them to get serious about hedging their fuel bills. Till 2007, most airline companies, that had hedged their fuel prices, had managed to reduce their fuel bills through hedging gains. But, from July 2008, oil prices started to come down rapidly, leaving numerous airline companies paying well above market rates for a good part of their fuel.</p> <p>Shyam, a shareholder of one of the airline companies, was puzzled. He and many other shareholders like him had been happy when they were informed that their company had started hedging fuel prices. They were explained that in times of rallying prices, the company would be protected through its fuel hedges because it would have fixed its purchases at lower than ruling fuel prices. And, even if prices were to fall, they would save money in spot market purchases. That is how hedges work.</p>		3, 1
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On reading reports that all companies that had hedged their fuel bills were facing losses on their hedges, Shyam asks a fellow shareholder, ‘Is it right to say that fuel hedgers are facing losses? They have surely lost an opportunity to buy fuel at the current low prices, but how could they have lost any money? The loss on fuel hedges will be made up because the fuel itself is cheaper to buy in the market now.’

The fellow shareholder tells him, ‘I have read that airline companies have not exactly hedged their fuel bills. They have made bets on movement of crude oil or heating oil, not the fuel that their jets really burn. That is the reason why their hedging losses are not getting offset by lower spot price purchases.’ To this Shyam replies, ‘But that should not matter. Crude oil, heating oil and fuel, all move up and down together. So, it is perfectly fine to hedge fuel bills with crude oil or heating oil. The hedge should still work perfectly well.’

His friend says, ‘From what I understand, many refineries that produce fuel are down because of a hurricane. As a result, crude oil prices have fallen and so have heating oil prices, but fuel prices have not fallen as much. For this reason, hedging losses are more but savings on bills are much less.’

Now Shyam could see the whole picture. He was quite shocked to realize that the company had a hedging programme based on a commodity different from what it was trying to hedge. He exclaims, ‘Why was this not made clear to us when they said they were starting a hedging programme? Did anyone try to study the correlation between crude oil and fuel prices before they embarked on such a programme? I think the company has tried to speculate on volatile oil prices using the guise of hedging. They should stop hedging altogether.’

Next morning, as Shyam picked up the newspaper, he was taken by surprise to read the statement by the CEO of his airline company. The CEO said, ‘We expect oil prices to go up once the global economy comes out of recession, hopefully by 2010. We have suffered losses this year on account of global shutdown hitting passenger and cargo business, as well as volatile fuel prices.’ As a shareholder of the company, Shyam felt cynical that the CEO should hope for an increase in oil prices and skip any mention of wrong hedging practices as the biggest cause for losses.

**Questions:**

- (a) What is the reason that airline companies are faced with hedging losses? Would they have been better off not hedging?
- (b) Is it wrong to hedge one commodity for which contracts may not be listed on the exchanges with another commodity with similar price movements? What is this hedging known as?
- (c) How can rallying oil prices make current hedges look good? How much should the prices rally for this?
- (d) Would you suggest any other derivative based on ATF to these airline companies for this situation and why?

7.5+  
7.5+  
7.5+  
7.5 =  
30