UPES
UNIVERSITY OF TOMORROW

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

Course: Energy Power Trading and Network Administration Semester: II
Program: MBA Power Management Time : 03 hrs.
Course Code: PIPM7004 Max. Marks: 100

Instructions:

SECTION A
10Qx2M=20Marks

S. No.		Marks	CO
Q1.	In accordance with the Electricity Act, 2003 define "Trading".	2	CO1
Q2.	Which of the following options is correct for Renewable Energy Certificates: a) Can be banked b) Can be bilaterally traded c) Repeated trade possible d)Valid of 1095 days after issuance	2	CO2
Q3.	A company X Ltd wishes to be associated with the Power Exchange for sale/purchase of power. What are the various categories of memberships it can opt for?	2	CO2
Q4.	Write a short note on the evolution of power market in India.	2	CO1
Q5.	If a discom plans to purchase 100MW power for 15 days on RTC basis, how much energy is being purchased?	2	CO2
Q6.	Trader A has 20 MW power available for sale. Trader B has a purchaser who is willing to buy 20 MW power. Suggest how the transaction can be carried out within the framework of the law.	2	CO2
Q7.	What is the purpose of Contract Performance Guarantee in a power purchase process?	2	CO1
Q8.	Which of the following is a clean source of energy but not a green source of energy? a) Solar Power b) Wind Power c) Gas based Thermal Power d) Geo Thermal Power	2	CO1
Q9.	According to the "Procedure for Scheduling Bilateral Transactions", how many days' notice is required to revise a schedule?	2	CO1
Q10.	If you are a category III power trader, then according to the CERC Trading License regulations, what is the Net worth to be maintained by you and how much volume are you authorized to trade.	2	CO1

	SECTION B		
	4Qx5M= 20 Marks		
Q11.	Select any one component of the power industry and roughly demonstrate the advantages of Futures Trading in Electricity to that component.	**10**	**CO2**
Q12.	Explain the advantages of Reverse Auction Bidding Process for Power Purchase.	**10**	**CO3**
Q13	Briefly discuss the responsibilities of a Load Dispatch Centre.	**10**	**CO3**
Q14	Discoms should be allowed to draw power in the form of Unscheduled Interchange (UI). Argue **For** or **Against** the statement	**10**	**CO2**
	SECTION-C		
	3Qx10M=30 Marks		
Q15.	Utility A and Utility B entered into a banking agreement. Utility A agreed to bank the power as per the following details: 	Period of Banking	Duration of Banking (Hrs)	Quantum (MW)	 	01.06.22 to 30.06.22	00.00 to 05.00, 10.00 to 13.00 and 22.00 to 24.00	100	 	01.07.22 to 31.07.22	00.00 to 06.00, 11.00 to 13.00 and 21.00 to 24.00	120	 	01.08.22 to 31.08.22	00.00 to 05.00, 10.00 to 13.00 and 22.00 to 24.00	110	 	01.09.22 to 30.09.22	00.00 to 24.00	140	 The details for return are as under: Period of Return: 01.12.22 to 31.01.23 Duration of Return: 00.60 to 18.00 Utility A has expressed its inability to offtake more than 100 MW power during the return period and has agreed to accept only 80% of the returnable power. It has further agreed that 120MW RTC Power will be offtaken during July 2023. Any short supply or extra supply will be settled at Rs. 2.70/kWh. Calculate: a) Volume of Power to be returned by Utility B at the start of the return period. b) Settlement amount (if any)	**10**	**CO3**
Q16.	M/s Tri Metal Smelters Ltd, located in Karnataka and connected at 132kV has the following power demand on a typical day: 00.00 to 09.00 Hrs: 18MW 09.00 to 18.00 Hrs: 35MW 18.00 to 24.00 Hrs: 28MW The CPP Installed within the premises has a capacity of 30 MW and generation cost of Rs. 3.25/kWh.	**10**	**CO4**

MCP of Exchange is Rs. 3.00/kWh

Assuming that Tri Metal Smelters sells the CPP power on the exchange when the power is not being internally utilized,

Calculate

a) The Net Cash Inflow/Outflow towards ensuring power availability
b) The net income/expenditure from exchange transactions.

Applicable transmission charges and losses:

Region/State	Losses	Charges
Karnataka Withdrawal	1.20%	Rs. 0.09/kWh
Karnataka Injection	1.30%	Rs. 0.10/kWh
Karnataka State	2.30%	Rs. 0.22/kWh
Karnataka Distribution	10%	Rs. 0.35/kWh

Q17.	Discuss in detail the difference between a Case I and Case II bidding procedure.	**10**	**CO3**

SECTION-D
1Qx30M= 30 Marks

Q18.	M/s Round the Clock Power Limited, a private distribution company operating in Tamil Nadu has floated a tender for purchase of 300 MW RTC Power for a period of 6 months starting 1st June 2022. The first leg of the bidding process has concluded and a lowest tariff of Rs. 3.95/kWh has been discovered. The tariff is exclusive of transmission and other charges. The bidder who quoted the lowest tariff is located in Maharashtra and connected to 132 kV Maharashtra State Transmission Company Substation. M/s Round the Clock Power Limited has now initiated the process of Reverse Auction. M/s Goodwill Thermal Power Station, a coal based thermal power station located in Chhattisgarh connected to 220kV PGCIL Substation is invited to match the lowest tariff. M/s Goodwill Thermal Power Station has hired you as their Power Trader for a trading margin of Rs. 0.03/kWh. The tariff quoted will have to be inclusive of the trading margin. Calculate the per unit tariff available to M/s Goodwill Thermal Power Station at their plant bus so that the lowest tariff is beaten by a margin of atleast Rs. 0.05/kWh. Following schedule of Transmission Charges and Losses may be used:	**30**	**CO4**

State/Utility	Transmission Charges (Rs/MWh)	Transmission Losses (%)
Maharashtra STU	35	2.30
Maharashtra Injection	45	1.24

Goodwill Thermal Power Station	43	1.75	
Tamil Nadu Withdrawal	55	1.50	
Tamil Nadu STU	42	2.50	
All other charges applicable as per regulations			