

**UNIVERSITY OF PETROLEUM
& ENERGY STUDIES**



End Semester Examination – May, 2017

Program/course: MBA (ENERGY TRADING)
Subject: Energy Trading II (Power & Emissions)
Code : MDSE837
No. of page/s: 4

Semester : IInd
Max. Marks : 100
Duration : 3 Hrs

All questions shall be strictly answered in chronological order.

SECTION A

[20 Marks]

(10X2)

Ques 1: Write the full forms of the following terms:

- (a) FCFS
- (b) AT&C
- (c) MERC

Ques 2: If a discom plans to purchase 100MW power for 15 days on RTC basis, how much energy is being purchased?

Ques 3: Identify the Nodal RLDC if power is being supplied from a generator in Maharashtra to a consumer in Uttar Pradesh.

Ques 4: What is the significance of Deviation Settlement Mechanism in context to Indian Power Sector?

Ques 5: Under normal conditions, in short term power sale/purchase how much rebate is applicable for timely payments?

Ques 6: List the various products offered by the Power Exchanges?

Ques 7: Which of the following options is correct for Renewable Energy Certificates:

- (a) Can be banked
- (b) Repeated trade possible
- (c) Can be bilaterally traded
- (d) Valid of 1095 days after issuance

Ques 8: List any two advantages of Power Exchanges over bilateral trading?

Ques 9: 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?

Ques 10: Write a note on reduction of specific energy consumption by a Designated Consumer.

SECTION B

[20 Marks]

Ques 11: Discoms should be allowed to draw power in the form of Unscheduled Interchange (UI). Argue **For** or **Against** the statement. (5)

Ques 12: As per CERC, Trading License is required to carry out transactions in the power market. However, the power exchanges do not require a trading license even though they are buying and selling power. What makes the power exchanges different from a trader? (5)

Ques 13: Write a note on the responsibilities of a Load Dispatch Centre. (5)

Ques 14: By means of a flow chart, explain the process of Reverse Auction in Power Purchase. (5)

SECTION C

[60 Marks]

Ques 15: Power Distribution Utilities A and B enter into an Energy Banking Agreement. The Arrangements are as under: (20)

Arrangement A: Banking of Power from Utility A to Utility B as under:

Period of Supply	Duration of Supply	Quantum (MW)
01.06.2017 to 30.06.2017	00.00 to 06.00, 12.00 to 13.00 and 20.00 to 24.00	50
01.07.2017 to 31.07.2017	00.00 to 24.00	50
01.08.2017 to 31.08.2017	00.00 to 06.00, 12.00 to 13.00 and 20.00 to 24.00	50

However, due to congestion, open access was allowed as per the following:

Period of Supply	Duration of Supply	Quantum (MW)
01.06.2017 to 30.06.2017	00.00 to 04.00 and 22.00 to 24.00	20
01.07.2017 to 31.07.2017	00.00 to 04.00 and 22.00 to 24.00	10
01.08.2017 to 31.08.2017	00.00 to 05.00 and 23.00 to 24.00	20

Arrangement B: Return of Banked Power from Utility B to Utility A

Period of Supply: 1st January 2018 to 31st March 2018

Duration of Supply: 00.00 to 05.00 and 23.00 to 24.00 hrs

It was decided to settle the balance energy @ Rs. 2.30/kWh

In light of the above information, answer the following questions:

Calculate:

1. The volume of energy to be returned:
 - a. @105% return of banked energy
 - b. @ 98% return of banked energy
2. The amount payable by Utility B to Utility A. Assuming the non-availability of Open Access as Force Majeure.

Ques 16: (30)

Brihan Mumbai Electricity Supply and Transport Undertaking (BES&T), a power distribution licensee operating in the Mumbai area has the following available options for power purchase:

1. Purchase of Power at Preferential Tariff to MSEDCL @ Rs. 5.25/kWh from a bagasse based cogeneration power plant located in the state of Maharashtra.
2. Purchase of power from a coal based thermal CPP located in Odisha connected to 132kV Substation of Odisha STU @ Rs. 3.28/kWh having 30 MW surplus power
3. Purchase of power from power exchange at MCP of Rs. 3.51/kWh

Details:

Quantum of Power: 100MW

Period of Supply: 1st January 2017 to 31st March 2017.

Duration of Power Supply: 00.00 to 24.00 hours

Maharashtra Electricity Regulatory Commission has implemented the Renewable Purchase Obligation and the penalty for not fulfilling the obligation stands at Rs. 6.50/kWh for the obligation not fulfilled. BES&T is 60MW short of achieving its RPO Targets.

As the person in-charge for power purchase in BES&T formulate a power purchase strategy for BES&T.

Following is the schedule Transmission Charges and Losses:

State/Region	Transmission/Distribution Charges	Transmission/Distribution Losses
Odisha STU	Rs. 40/MWh	1.08%
Odisha Injection	Rs. 90/MWh	1.23%
Eastern Region	Rs. 80/MWh	1.01%
Western Region	Rs. 80/MWh	1.20%
Maharashtra Withdrawal	Rs. 70/MWh	1.65%
Maharashtra STU	Rs. 75/kWh	1.35%

Other charges applicable as per procedure

Ques 17:

(10)

A seller wishes to sell the power generated by his Naphtha based Thermal Power Station located in Andhra Pradesh through Power Exchange. His net realization through exchange is Rs. 5.50/kWh. You as a trader is in discussion the state owned discom of Rajasthan for supply of power. Assuming the following data, calculate the best tariff at buyer's bus bar that can make the seller change his mind to sell the power on the exchange.

Both the seller and buyer are connected to state transmission system.

Details:

Quantum of Power: 20MW

Period of Supply: 1st June 2017 to 31st July 2017.

Duration of Power Supply: 00.00 to 24.00 hours

	Andhra Pradesh	Rajasthan
Injection /Withdrawal Losses	1.25%	1.00%
Injection /Withdrawal Charges	Rs. 0.03/kWh	Rs. 0.20/kWh
STU Transmission Losses	3.00%	2.50%
STU Transmission Charges	Rs. 0.25/kWh	Rs. 0.30/kWh