

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**THIRD SEMESTER M.TECH DEGREE EXAMINATION****Electrical and Electronics Engineering****04EE 7405 Power System Economics**

Max. Marks: 60

Duration: 3 Hours

Part A - Answer All Questions (Each Question carry 3 Marks)

1. Discuss about the theory of demand in deregulated electricity market.
2. Define the term 'price volatility' with suitable example.
3. Differentiate between generation asset valuation and generation capacity valuation.
4. Briefly explain the term available transfer capacity.
5. Define 'Equal Area Criteria' for stability enhancement.
6. Briefly explain the term 'Transient Stability' for generators.
7. What is the effect of reactive loading in a distribution transformer?
8. What are the different loss components? Differentiate between load factor & loss factor.

Part B – Answer All Questions

9. Explain the role of ISO in energy market. (6 marks)

Or

10. Discuss in detail about the electricity market models and explain each models role. (6 marks)
11. Define and discuss the salient features of automatic generation control. (6 marks)

Or

12. Explain the term Price Discrimination in energy market and how it is classified? Discuss about its advantages and disadvantages. (6 marks)
13. Define the term VaR in asset valuation in terms of its application in power market. (6 marks)

Or

14. With neat schematic, explain the VaR calculation for generation capacity valuation (6 marks)
15. Explain the significance of DGs in various perspective of energy market. (6 marks)

Or

16. Explain the role of FACTS devices in managing transmission congestion, ATC and voltage stability. (6 marks)

17. A generating station has a capacity of 5×10^4 KW and delivers 200×10^6 units of energy per year. If the amount of fixed charges is Rs. 150 per KW of capacity and the running charges are 5 paisa per KWh, determine the generation cost. (6 marks)

Or

18. Define the term 'Transient Instability' and briefly explain the basic causes. (6 marks)
19. Explain the different types of tariffs? (6 marks)

Or

20. An industry has a maximum demand of 250KW at 0.8pf lagging. It consumes 50,000 units annually. The tariff in force is Rs. 50/- per KVA plus Rs. 0.25/- per unit consumed. Calculate the annual bill of the industry. What will be the effect in annual bill if the power factor is improved and maintained at unity? (6 marks)