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B. Tech.

(SEM_VII) THEORY EXAMINATION 2022-23
SUBJECT NAME -DEREGULATED POWER SYSTEM

Time: 3 Hours**Total Marks: 100****Note:** Attempt all Sections. If you require any missing data, then choose suitably.**SECTION A****1. Attempt all questions in brief.****2x10 = 20**

- (a) Discuss the effects of deregulation.
- (b) What is 'unbundling of electricity rates'?
- (c) Define independent system operator(ISO).
- (d) What is competitive bidding?
- (e) Define active power demand contribution.
- (f) Discuss the wheeling cost for a generator.
- (g) Define the ancillary services.
- (h) What are the objectives of ancillary services?
- (i) Define the reliability cost.
- (j) What do you understand about the regulation of the market?

SECTION B**2. Attempt any three of the following:****10x3 = 30**

- (a) Explain the advantages and disadvantages of deregulation. Discuss deregulation in the energy sector with a suitable example.
- (b) Discuss in detail about Operational planning activities of ISO.
- (c) Define the principle of wheeling in the power system in detail and list the main objectives of wheeling.
- (d) Explain "ancillary services management in various countries".
- (e) Discuss in detail the transmission and distribution reliability

SECTION C**3. Attempt any one part of the following:****10x1 = 10**

- (a) How does energy deregulation save money and improve the environment? Explain the process of change of energy providers.
- (b) Discuss the different components of the unbundled electric bill in detail.

4. Attempt any one part of the following:**10 x1 = 10**

- (a) Describe the ISO's role and responsibilities in the following areas:
 - (i) Operations Planning and Scheduling
 - (ii) Dispatching of Generation Resources
- (b) Differentiate between the pool model, pool and bilateral trade model, and multilateral trade models of deregulation.

5. Attempt any *one* part of the following: 10x1 = 10
- (a) General description of some ancillary services, ancillary services management in various countries, and reactive power management in some deregulated electricity markets.
 - (b) Illustrate security management in a deregulated environment in detail.
6. Attempt any *one* part of the following: 10x1 = 10
- (a) Write short notes on
 - (i) Spinning Reserve
 - (ii) Non-Spinning Reserve
 - (iii) Load Following
 - (b) Comment on 'reactive power management in deregulated electricity markets
7. Attempt any *one* part of the following: 10x1 = 10
- (a) Describe the factors that affect the reliability of the product.
 - (b) What are the methods used to determine the reliability? Discuss anyone in detail.

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