

Roll No: 

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**BTECH**  
**(SEM VII) THEORY EXAMINATION 2024-25**  
**DEREGULATED POWER SYSTEM**

TIME: 3 HRS

M.MARKS: 100

**Note:** Attempt all Sections. In case of any missing data, choose suitably.

**SECTION A**

**1. Attempt all questions in brief. 2 x 10 = 20**

Q no.	Question	CO	Level
a.	Define deregulation in the context of power systems.	1	K1
b.	List two benefits of a competitive electricity market.	1	K1
c.	Explain the role of an Independent System Operator (ISO) in a deregulated market?	2	K2
d.	Differentiate between Pool markets and Bilateral markets.	2	K2
e.	Explain the term "power wheeling."	3	K2
f.	Outline two pricing methods for power transactions in a deregulated market.	3	K1
g.	Discuss the ancillary services in power systems?	4	K2
h.	Demonstrate the importance of reactive power management in deregulated electricity markets.	4	K3
i.	Define "reliability cost" in power systems	5	K1
j.	Explain the conflict between reliability and deregulation.	5	K2

**SECTION B**

**2. Attempt any three of the following: 10 x 3 = 30**

Q no.	Question	CO	Level
a.	Explain the advantages and disadvantages of deregulation. Discuss deregulation in the energy sector with a suitable example.	1	K4
b.	Explain operational planning activities of a GENCO in both Pool and Bilateral markets.	2	K4
c.	Illustrate the concept of transmission open access and its impact on deregulated markets.	3	K3
d.	Demonstrate ancillary services management practices in any two countries.	4	K3
e.	Explain how does stochastic modeling help in reliability analysis of power systems?	5	K4

**SECTION C**

**3. Attempt any one part of the following: 10 x 1 = 10**

Q no.	Question	CO	Level
a.	Explain the benefits and aftereffects of deregulation on power systems.	1	K4
b.	Discuss unbundling of electric utilities and its importance in the context of deregulation.	1	K2

**4. Attempt any one part of the following: 10 x 1 = 10**

Q no.	Question	CO	Level
a.	Discuss the ISO's role and responsibilities in the following areas: i. Operations Planning and Scheduling ii. Dispatching of Generation Resources	2	K2

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b.	Explain the challenges faced by ISOs in operational planning in deregulated environments.	2	K4
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**5. Attempt any one part of the following: 10 x 1 = 10**

Q no.	Question	CO	Level
a.	Explain methods of congestion management in a deregulated environment.	3	K4
b.	Explain security management techniques used in deregulated electricity markets.	3	K4

**6. Attempt any one part of the following: 10 x 1 = 10**

Q no.	Question	CO	Level
a.	Illustrate the reactive power management strategies in deregulated power systems.	4	K3
b.	Explain the interdependence of ancillary services and deregulation.	4	K4

**7. Attempt any one part of the following: 10 x 1 = 10**

Q no.	Question	CO	Level
a.	Explain the methods used to determine the reliability? Discuss anyone in detail.	5	K4
b.	Explain the effects of deregulation on the actual reliability of power systems.	5	K4