

[illegible]

**M.MARKS: 100**



PAPER ID-310219

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Subject Code: KEE501

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**BTECH**  
**(SEM V) THEORY EXAMINATION 2023-24**  
**POWER SYSTEM - I**

**TIME: 3 HRS****M.MARKS: 100****4. Attempt any one part of the following:**

Qno.	Question	Marks	CO
a.	Classify different types of supply system and compare the volume of conductor DC two wire system and 3- $\phi$ 3-wire system?	10	2
b.	Analyze the performance of medium transmission line (T model). Draw phasor diagram and derive relation for ABCD parameters.	10	2

**5. Attempt any one part of the following:**

Qno.	Question	Marks	CO
a.	An insulator string consists of three units, each having a safe working voltage of 15 kV. The ratio of self-capacitance to shunt capacitance of each unit is 8: 1. Find the maximum safe working voltage of the string. Also find the string efficiency.	10	3
b.	Discuss different methods of improving string efficiency?	10	3

**6. Attempt any one part of the following:**

Qno.	Question	Marks	CO
a.	Explain Catenary method for finding the sag in a transmission line?	10	4
b.	Explain rigorous method for long transmission line?	10	4

**7. Attempt any one part of the following:**

Qno.	Question	Marks	CO
a.	Discuss the inter-sheath grading of cables. What are practical difficulties in the grading of cables?	10	5
b.	Find the most economical diameter of a single core cable to be used on 66 KV, 3-phase system. If the peak permissible stress is not to exceed 50 KV/m. Also find overall diameter.	10	5