

II B. Tech II Semester Supplementary Examinations, Nov/Dec - 2016**POWER SYSTEMS - I**

(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 70

- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answer **ALL** the question in **Part-A**
3. Answer any **THREE** Questions from **Part-B**
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PART -A

1. a) What are the characteristics required for a good Ash handling plant in a thermal Power station. (4M)
- b) Define the working principle of a nuclear power station (4M)
- c) What do meant by Ring or loop distribution system (4M)
- d) What is meant by switching Substation? (4M)
- e) How do classify the cables used for underground service (3M)
- f) Define the term Plant capacity factor (3M)

PART -B

2. a) List the points that were considered for the selection of site in a thermal power station. (8M)
- b) Give the comparison between Fire tube and Water tube boilers (8M)
3. a) Explain with a neat layout diagram, the working of a Nuclear Power Station (12M)
- b) Describe the internal radiation hazards of nuclear power stations (4M)
4. a) List the different factors that were effecting Distribution system losses (8M)
- b) Calculate the voltage at a distance of 250m of a 350m long distributor uniformly loaded at the rate of 0.8A/m. The distributor is fed at one end at 250V. The resistance of the distributor (go and return) per meter is 0.00017 Ω . Also find the power loss in the distributor. (8M)
5. a) What are the considerations for the selection of site for an Outdoor substation? (8M)
- b) Compare between Air –Insulated and Gas – insulated Substations (8M)
6. a) Derive the necessary equation for finding the capacitance of a single core cable (8M)
- b) Find the most economical size of a single core cable working on a 132 KV, 3 – Phase system, if dielectric stress of 5KV/mm can be allowed. (8M)
7. Write short notes on the following: (16M)
 - a) Integrated load duration curves
 - b) Three part Tariff Method
 - c) Constructional aspects of Gas Insulated sub stations
