Code No: RT22024 **R13** SET - 21

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 . 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

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