Code No: R1622025 **R16** SET - 1

II B. Tech II Semester Regular Examinations, November - 2018
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 **FOUR** Questions from **Part-B**

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PART –A

1. a) Explain the significance of Super heater and reheaters in thermal Power station [2M]
   b) List the advantages of Pressurized Water Reactor(PWR) [2M]
   c) Distinguish between Feeder and service main [3M]
   d) List the favorable features of Mesh scheme(or ring Bus) [2M]
   e) Distinguish between low tension cables and high tension cables [3M]
   f) Explain the factors that affect the cost of power generation [2M]

PART -B

2. a) List and explain the different methods of feed water treatment in thermal power station [7M]
   b) What are the types of steam turbines used in Thermal power station and explain their use and characteristics. [7M]

3. a) Explain the working of Boiling Water Reactor(BWR) with a neat sketch [7M]
   b) Explain the basic design factors that need to be considered for a Nuclear reactor [7M]

4. A 2 – core distributor cable 400 meters long supplies a uniformly distributed lighting load of 1 amp per meter. There are concentrated loads of 120, 72, 48 and 120 Amperes at 40, 120, 200 and 320 meters respectively from the end A. The cable has a resistance of 0.15 ohm per km run. Determine the position of the lowest - run lamp and its voltage when the cable is fed at 250 V from both ends A and B [14M]

5. a) Explain the single Bus - bar scheme with a neat connection diagram [7M]
   b) List the different types of Gas insulated substations and explain any one type with a neat lay out diagram [7M]

6. a) Explain the commonly used cable insulations and give their merits [7M]
   b) Find the most economical diameter of a single core cable to be used on a 132 KV, three phase system. Find also the overall diameter of the insulation if the peak permissible stress is not to exceed 60 KV per cm. [7M]

7. Explain the terms that are commonly used in power system operation: [14M]
   i) Connected load ii) Firm Power iii) Cold reserve iv) Hot reserve
   v) Spinning reserve vi)Diversity factor vii) Plant use factor

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