

II B. Tech II Semester Regular Examinations, August/September - 2021**POWER SYSTEMS - I**

(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 75

Answer any **FIVE** Questions each Question from each unitAll Questions carry **Equal** Marks

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- 1 a) Explain the significance of Economizer and Air preheater in a thermal Power station. [8M]
 b) What is feed water and explain the different methods of Feed water treatment? [7M]
- Or
- 2 a) Distinguish between Impulse and reaction turbine in detail. [8M]
 b) List out the various advantages of Pulverized fuel firing of coal. [7M]
- 3 a) Draw a neat schematic diagram of Nuclear power plant and explain its operation. [8M]
 b) Give the classification of nuclear reactors and state on what basis they are done. [7M]
- Or
- 4 a) List the advantages and disadvantages of pressurized water reactor over Boiling water reactor. [8M]
 b) Distinguish in detail between thermal and fast breeder reactor. [7M]
- 5 a) List the advantages and disadvantages of outdoor substations. [7M]
 b) Explain the typical electric supply system indicating position of various types of transformer substations with a neat block diagram. [8M]
- Or
- 6 a) Explain in detail about the main and transfer bus scheme arrangement with a neat sketch. [8M]
 b) List and explain the common maintenance procedures followed in Gas insulated substations. [7M]
- 7 a) Explain the use of Intersheaths and also explain the Electric stress distribution in cables. [8 M]
 b) Explain the various causes of breakdown of cables. [7M]
- Or
- 8 a) List and explain the various Thermal characteristics on cables [7M]
 b) A 11 KV single conductor cable has an outside diameter of 10 cm. Determine the conductor radius and the electric field strength that must be withstood by the insulating material in the most economical optimal – ratio configuration. [8M]
- 9 a) Explain the following terms w.r.t Economic Aspects: [8M]
 i) Demand factor ii) Base and Peak load plants
 b) A generating station has a maximum demand of 600 MW. The annual load factor is 48% and capacity factor is 42 %. Find the reserve capacity of the plant. [7M]
- Or
- 10 Explain the following w.r.t Tariffs: i)KVA maximum demand tariffs ii)Average Power factor Tariffs iii)KWh and KVARh Tariffs [15M]

