R07

Code: R7220204

B.Tech II Year II Semester (R07) Supplementary Examinations December/January 2015/2016

POWER SYSTEMS - I

(Electrical & Electronics Engineering)

(For 2008 regular admitted batch only)

Time: 3 hours Max. Marks: 80

Answer any FIVE questions

All questions carry equal marks

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1 (a) Explain about Pulverization.
(b) Mention the advantages and disadvantages of pulverizing the fuel used in boilers.

2 Explain about BWR and Fast Breeder reactors.

3 (a) Explain the features of D.C distribution systems.
(b) Compare over head distribution systems with under-ground distribution systems.

4 A 3-phase ring distributor PQRS, fed from the end P at 11 kV, supplies balanced loads of 40 A at 0.85 pf lag at Q, 50 A at 0.8 pf lag at R and 60 A at UPF at S, the load currents being referred to the voltage at P. The impedances of the sections PQ, QR, RS and SP are (4+5j), (3+j2), (3+j5) & (4+j3) Ω respectively. Calculate the currents in various sections and bus bar voltages at Q,R and S.

5 (a) Explain the role of sub-station in a power system.
(b) Draw and explain the layout of 11 KV / 440 KV substations.

6 (a) Explain the causes of low power factor of the supply system.
(b) Discuss the various methods of power factor improvement.

7 (a) Enlist the effects of high load factor on the operation of power plants.
(b) A generating station has a maximum demand of 600 MW, the annual load factor is 60% and capacity factor is 45%. Find the reserve capacity of the plant.

8 (a) Write short notes on power factor tariff.
(b) A consumer has a maximum demand of 200 kW at 40% load factor. If the tariff is Rs 100/- per kW of maximum demand plus 10 paise per kWh, find the overall cost per kWh.

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