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NEW SCHEME

Fifth Semester B.E. Degree Examination, Dec. 06 / Jan. 07
Electrical and Electronics Engineering
Electrical Power Generation

Time: 3 hrs.]

[Max. Marks:100

Note: 1. Answer any FIVE full questions.
2. Missing data may be suitably assumed.

- 1 a. Write short notes on:
 - i) Wind power ii) Geo-thermal energy iii) Tidal power. (06 Marks)
- b. With a neat schematic diagram explain essential elements of Hydro Electric Power Plant. (08 Marks)
- c. With a neat sketch explain working of impulse turbine used in hydro electric power plants. (06 Marks)

- 2 a. What are the different methods of fuel firing? Discuss the working principles of stokers used in steam power plants. (06 Marks)
- b. With neat diagrams explain the following with respect to thermal power plant:
 - i) Economizer ii) Surface condenser. (08 Marks)
- c. With a neat sketch explain working of water tube boiler. (06 Marks)

- 3 a. With a neat sketch explain various parts of a nuclear-reactor. (08 Marks)
- b. Sketch and explain working of fast breeder reactor system. (06 Marks)
- c. What is meant by uranium enrichment? Explain the gaseous diffusion method of uranium enrichment with a neat figure. (06 Marks)

- 4 a. With a neat sketch explain working of open cycle gas turbine plant. (06 Marks)
- b. Discuss the advantages of gas turbine power plant over thermal power plants. (06 Marks)
- c. Sketch the layout diagram of gas turbine power plant. Discuss the advantages of combined operation of gas turbine plant and steam power plant. (08 Marks)

- 5 a. Explain the following terms as applied to power system:
 - i) Maximum demand ii) Load factor iii) Diversity factor. (06 Marks)
- b. A domestic consumer has 10 lamps of 40 Watts each, connected in his house. His demand is given as follows:

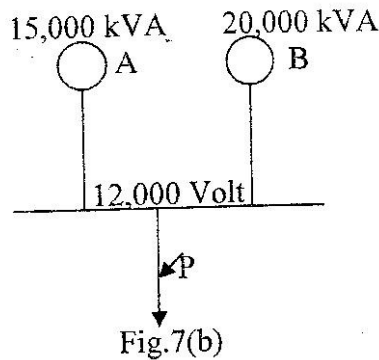
Midnight to 5 am	40 Watt
5 am to 6 pm	No-load
6 pm to 7 pm	320 Watt
7 pm to 9 pm	360 Watt
9 pm to 12 midnight	160 Watt.

 Plot the load curve,
 Determine: i) Average load ii) Maximum load iii) Load factor iv) Energy consumption during one day. (10 Marks)
- c. Discuss the advantages of interconnection of power stations. (04 Marks)

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- 6 a. What are the causes of low power factor? Discuss the disadvantages of having poor power factor. (04 Marks)
- b. Explain two different methods of improving power factor of the system with the help of vector diagrams. (10 Marks)
- c. Discuss on flat rate tariff, two part tariff and power factor tariff. (06 Marks)
- 7 a. What are current limiting reactors? (06 Marks)
- b. For a given single line diagram of a three phase system, the percentage reactance of alternator A is 30%, the percentage reactance of alternator B is 50%. Find short circuit current that will flow into a complete 3 phase short circuit at point P as shown in fig.7(b). (10 Marks)



- c. With a neat sketch explain solid grounding. (04 Marks)
- 8 a. With the help of neat sketch explain:
- i) Single bus-bar arrangement with bus sectionalizer (10 Marks)
 - ii) Ring bus-bar scheme. (10 Marks)
- b. Discuss about different equipments used in substations.
