

CBCS Scheme

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15EE42

Fourth Semester B.E. Degree Examination, June/July 2018 Power Generation and Economics

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. What is hydrological cycle? (02 Marks)
b. Describe the merits and demerits of hydroelectric power –plants. (08 Marks)
c. What are the characteristics of a water turbine? (06 Marks)

OR

- 2 a. What is meant by the phenomenon 'water hammer'? Explain how a surge tank helps in reducing water hammer effect. (05 Marks)
b. Explain working of pumped storage power plant, stating its advantages with the help of a schematic diagram. (08 Marks)
c. Define impulse and reaction type of turbines. (03 Marks)

Module-2

- 3 a. What are the main considerations for selection of site for a thermal power station? (08 Marks)
b. Explain briefly the functions of : i) Reheaters ii) Condensers. (06 Marks)
c. What do you understand by fluidized bed combustion? (02 Marks)

OR

- 4 a. Explain the field of applications of diesel power plants. (08 Marks)
b. Describe the working of closed cycle gas turbine power-plant with a schematic diagram. (08 Marks)

Module-3

- 5 a. Describe the operation of nuclear power plant with the help of a block diagram showing basic components. (07 Marks)
b. Describe fast breeder reactors, stating its advantages. (07 Marks)
c. What is nuclear fission? (02 Marks)

OR

- 6 a. With a neat diagram, explain main parts and their function of a nuclear reactor. (08 Marks)
b. Explain with respect to a nuclear plant : i) Nuclear waste disposal ii) Shielding. (06 Marks)
c. What is meant by radio activity? (02 Marks)

Module-4

- 7 a. What are the functions of a sub-station? (06 Marks)
b. List out the advantages and disadvantages of outdoor substation over indoor substation. (06 Marks)
c. What do you understand by : i) switch gear ii) protective relay. (04 Marks)

OR

- 8 a. Explain : i) resistance grounding and ii) reactance grounding, stating where they are employed. (06 Marks)
- b. State the functions of : i) current limiting reactor ii) lighting arrester iii) fuse. (06 Marks)
- c. Give the classification of sub-stations. (04 Marks)

Module-5

- 9 a. Describe the classification of cost of electricity. (06 Marks)
- b. What are the factors to be considered while deciding the number of generating units? (06 Marks)
- c. Define : i) cold reserve ii) hot reserve iii) operating reserve iv) spinning reserve. (04 Marks)

OR

- 10 a. Define : i) demand factor ii) diversity factor. (04 Marks)
- b. Describe types of consumers and their tariffs. (06 Marks)
- c. Explain the disadvantages of low power factor. (06 Marks)

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