



CBCS SCHEME

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18EE42

Fourth Semester B.E. Degree Examination, Dec.2023/Jan.2024 Power Generation and Economics

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Define the following:
- (i) Hydrograph (06 Marks)
 - (ii) Mass curve (06 Marks)
 - (iii) Flow duration curve (08 Marks)
- b. Explain the classification of hydroelectric power plants. (06 Marks)
- c. Explain with neat sketch the working of hydroelectric power plant station and explain the function of each components in it. (08 Marks)

OR

- 2 a. What are the main considerations for selection of site for a hydroelectric power station? (06 Marks)
- b. Give difference between impulse turbine and reaction turbine. (07 Marks)
- c. Explain the governing mechanism of water turbine with neat sketch. (07 Marks)

Module-2

- 3 a. Draw the schematic diagram of modern steam power station and explain its operation with its important components. (07 Marks)
- b. Explain the factors to be considered for site selection of a steam power plant. (06 Marks)
- c. Explain with neat sketch, block diagram of diesel power plant. (07 Marks)

OR

- 4 a. With a neat sketch explain working of gas turbine power plant. (07 Marks)
- b. Discuss the advantages and disadvantages of a diesel power plant. (07 Marks)
- c. Discuss in brief methods of improving thermal efficiency of gas turbine power plant. (06 Marks)

Module-3

- 5 a. Explain with a neat diagram various parts of a nuclear reactor. Explain clearly the each part. (07 Marks)
- b. Explain the methods of nuclear waste disposal. (07 Marks)
- c. Mention the factors to be considered for the selection of site for nuclear power plant. (06 Marks)

OR

- 6 a. Describe construction and working of a pressurized water reactor. (07 Marks)
- b. Explain the function of Moderator, coolant control rod and shielding in nuclear power plant. (08 Marks)
- c. Mention advantages and disadvantages of nuclear power plant. (05 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

Module-4

- 7 a. Write short notes on:
(i) High voltage fuses
(ii) High voltages circuit breakers
b. Define substation and mention different types of substation.
c. Explain resonant grounding and resistance grounding with a neat diagram.

(06 Marks)

(06 Marks)

(08 Marks)

OR

- 8 a. Explain single bus bar with bus sectionalizer.
b. Explain the factors to be considered for substation site selection.
c. Explain gas insulated substation and mention its advantages.

(06 Marks)

(06 Marks)

(08 Marks)

Module-5

- 9 a. Define tariff. Explain:
(i) Block rate tariff
(ii) Two port tariff
(iii) KVA maximum demand tariff
b. Explain methods of determination of depreciation.
c. Write a short note on classification of costs.

(06 Marks)

(08 Marks)

(06 Marks)

OR

- 10 a. Explain the methods of power factor improvement. Explain any one.
b. List the principal factors affecting framing of tariff.
c. Explain the economics of power factor improvement.

(08 Marks)

(06 Marks)

(06 Marks)
