



C20-M-405

7458

BOARD DIPLOMA EXAMINATION, (C-20)
OCTOBER/NOVEMBER—2024

DME – FOURTH SEMESTER EXAMINATION

ENERGY SOURCES AND POWER PLANT ENGINEERING

Time : 3 Hours]

[Total Marks : 80

PART—A

3×10=30

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. Write any three advantages and disadvantages of renewable energy sources.
2. State the necessity of alternate sources of energy.
3. List out the alternate fuels that can be used in IC engines.
4. Write any six applications of solar photo voltaic system.
5. Write the classification of wind mills.
6. State the different types of fuels used in fuel cells.
7. Write any three differences between floating drum type digester and fixed dome type digester.
8. List out the main components of tidal power plant.
9. List out the important six elements used in thermal power plants.
10. State the merits and demerits of nuclear power plants.

PART—B

8×5=40

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **eight** marks.
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

- 11.** (a) Explain the different types of concentrating type solar collectors with neat sketches.

(OR)

- (b) Explain the working of vertical axis wind mills with a neat sketch.

- 12.** (a) Explain the construction and working of solar pond with a neat sketch.

(OR)

- (b) Explain the electrical power generation using wind mill with the help of a neat sketch.

- 13.** (a) Describe the constructional details and working principle of Bacon's high pressure fuel cell.

(OR)

- (b) State the advantages and limitations of MHD generators.

- 14.** (a) Explain the constructional details and working principle of fixed dome type bio-gas plant with the help of a neat sketch.

(OR)

- (b) Explain the different components of a Tidal power plant with a neat schematic layout.

- 15.** (a) Explain different types of coal handling equipments with neat sketch in power plant.

(OR)

- (b) Explain the working and constructional details of pressurized water reactor (PWR) with a neat sketch.

PART—C

10×1=10

- Instructions :** (1) Answer the following question.
(2) The question carries **ten** marks.
(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 16.** Explain the main circuits that would come across in any thermal power plant with a neat schematic layout.

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