7247

BOARD DIPLOMA EXAMINATION, (C-20)

JUNE/JULY—2022

DEEE - THIRD SEMESTER EXAMINATION

POWER SYSTEM - I (GENERATION)

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.　List the types of tidal power plant.

2.　State the method to produce bio-power.

3.　List any six factor for selection of site for thermal power plants.

4.　Define condenser.

5.　Define thermal efficiency.

6.　State the purpose of reservoir in hydel power plant.

7.　Define surge tank.

8.　State the properties of uranium.

9.　List the merits of nuclear energy.

10.　State any three differences between isolated operation and integrated operation of power stations.

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 with a legible labelled diagram, the working principle of electrostatic precipitator.

(OR)

(b) Discuss various instruments used for measuring different quantities in thermal power stations.

12. *(a)* Explain the working of high head hydroelectric power plant with line diagram.

(OR)

(b) Classify hydro-electric power station based on duty cycle or load and explain.

13. *(a)* Describe the working of gas power plant with schematic diagram.

(OR)

*   *(b)* Explain the working of nuclear power plant with block diagram.

14. *(a)* A single-phase 400 V, 50 Hz motor connected across a supply draws a current of 40 A at a power factor of 0·6 lagging. The motor power factor is improved to 0·85 by connecting a condenser in parallel. Calculate the capacity of the condenser required.

(OR)

(b) Explain the various types of consumer power tariffs which are common in use.

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15. *(a)* List the causes of low power factor.

(OR)

(b) Explain the significance of load curve with legible diagrams of various load curves.

PART—C   10×1=10

Instructions : (1) Answer the following question.

(2) Question carries ten marks.

(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

16. With improvement in load factor and diversity factor, cost per unit generation is increased. Is it true? Justify your answer.

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