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C14–EE–**403**

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BOARD DIPLOMA EXAMINATION, (C–14)
MARCH/APRIL—2016
DEEE—FOURTH SEMESTER EXAMINATION

POWER SYSTEMS—I (G)

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. State the disadvantages of biomass power plant.

2. State the advantages of pulverization of coal in thermal power station.

3. State the need of energy auditing.

4. Classify the hydroelectric power stations on the basis of available head.

5. State the demerits of hydroelectric power stations.

6. Define the terms 'nuclear fission' and 'nuclear fusion'.

7. State the different materials used for control rods.

8. State the amount of solar radiation reaching the earth's surface.

9. State the merits of integrated power stations.

10. State the effect of load factor and diversity factor on the cost of electrical energy generated.

PART—B   10×5=50

Instructions : (1) Answer *any* **five** questions.

(2) Each question carries **ten** marks.

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

11. *(a)* Explain the working of tidal power plant with a neat sketch.

(b) State and explain the function of superheater and air-preheater.

12. State the need of cooling towers in thermal power station. Explain different types of cooling tower.

13. Explain the working of high head hydroelectric power station with a neat layout diagram.

14. Explain the working of a nuclear power station with a block diagram.

15. *(a)* Explain the function of flat plate collector with a neat sketch.

(b) Explain the energy conversion of solar cell.

16. *(a)* State the different considerations for site selection of installing wind mill.

(b) Describe the construction details of the wind mill.

17. State and explain the methods of improving the power factor in power system.

18. A 1– motor connected to a 230 V, 50 Hz supply takes 30 A at a p. f. of 0·7 lag. A capacitor is shunted across the order terminals to improve the p. f. to 0·9 lag. Find the capacitance of the capacitor.

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