Hall Ticket No   Question Paper Code: AEEB14

INSTITUTE OF AERONAUTICAL ENGINEERING
(Autonomous)

B.Tech IV Semester End Examinations (Regular), November – 2020
Regulation: IARE–R18
ELECTRICAL POWER GENERATION SYSTEMS

Time: 2 Hours   (EEE)   **Max Marks: 70**

Answer any Four Questions from Part A
Answer any Five Questions from Part B

PART – A

1. Brief the description of pressurized water reactor and boiling water reactor. **[5M]**

2. Describe the merits and demerits of hydroelectric power plants. **[5M]**

3. With neat sketch explain about the band gap theory **[5M]**

4. Give short note on different types of wind turbine. **[5M]**

5. What are the factors to be consider while deciding the number of generating units **[5M]**

6. Give short note on nuclear fission and nuclear fusion **[5M]**

7. Explain about aerodynamics and blade element theory. **[5M]**

8. What are the different factors affecting cost of generation explain? **[5M]**

PART – B

9. With a neat sketch explain line diagram of a thermal power plant. **[10M]**

10. Explain essential components of a nuclear reactor which are used in the nuclear power station. **[10M]**

11. With schematic diagram describe the components and working of the hydro power plant. **[10M]**

12. Write short notes on i) Impulse turbine ii) Reaction turbines. Explain the working of Kaplan turbine. **[10M]**

13. Explain about the solar radiation on a tilted surface. Give short note on semiconducting materials. **[10M]**

14. Give short note on photovoltaic effect and tell the types of solar cells. Enumerate the different types of concentrating type collectors. **[10M]**

15. Explain how power is extracted from the wind. Describe the safety and environmental aspects of wind power. **[10M]**

16. Explain principle of operation of an induction generator which is used in wind plant. **[10M]**

17. Give a short notes on
   i) Connected load
   ii) Peak load
   iii) Base load
   iv) Maximum demand
   v) Load factors. **[10M]**

18. A generating station has a connected load of 43MW and a maximum demand of 20 MW; the units generated being 60×10^6 per annum. Calculate i) Load factor ii) Demand factor **[10M]**

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