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C14-EE-**403**

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BOARD DIPLOMA EXAMINATION, (C-14)
OCTOBER/NOVEMBER-2018
DEEE-FOURTH SEMESTER EXAMINATION

POWER SYSTEMS-I

Time: 3 Hours] [Total Marks: 80

PART-A

3X10=30

Instructions :

1. Answer **All** questions.
2. Each question carries **Three** marks.
3. Answer should be brief and straight to the point and shall not exceed five simple sentences.

1. State the need of non-conventional energy sources.
2. State the methods to control pollution in thermal power plant.
3. List any three advantages of condensation.
4. State any three disadvantages of hydroelectric power stations.
5. State the functions of surge tank and spill gates in hydel power station.
6. State the materials used for coolant reflector and control rods in nuclear reactor.
7. Compare nuclear power plant and hydroelectric power plant in any three aspects.
8. List the various renewable energy sources.
9. State the causes of low power factor.
10. State any three advantages of integrated power station.

PART-B

10X5=50

Instructions :

1. Answer any **Five** questions.
2. Each question carries **ten** marks.
3. Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer

11. (a) Explain any two types of the cooling towers in thermal power station.

    (b) State the features of energy auditing.

12. Explain working of high head hydro-electric power plant with a neat layout diagram.

13. A hydro electric power station has a catchment area of 3000 Sq.K.m the average rain fall in the area is 180cm. the mean head available for turbine is 200 meter. Assuming seepage and losses as 25% and head lost in penstocks as 5%. Calculate the power available from such a project. Assume overall efficiency is 80%. Also suggest suitable capacity and number of generators to be installed.

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

15. Explain the working principle of solar air heater with a neat sketch and also list any three applications of solar sir heater.

16. (a) Explain the factors affecting the selection of site for establishing wind mill.

    (b) Explain the working principle of wind mill.

17. The maximum demand of a 50 MW power station is 40 MW in a particular day. The power station supplies to various consumers having maximum demand of 5 MW, 7MW, 15MW and 19MW. The daily load factor is 50%. Find i) average load ii) energy supplied per day iii) demand factor and iv) diversity factor.

18. (a) Define tariff and explain various types of tariffs.

    (b) Write a short note on energy management.

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