BVCTE NASHIK.

Electrical Power Generation

ELECTRICAL DEPARTMENT

EE3G SUBJECT COD: 17324

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1) State and explain the advantages of conventional energy sources over non-conventional energy sources. (Any four).

2) Explain the function of each component in steam generating unit in thermal power station.

3) Draw schematic block diagram of thermal power station and indicate following circuit in diagram clearly.

i) Fuel and ash circuit.

ii) Feed water and steam circuit

iii) Air and flue gas circuit

iv) Cooling water circuit.

4) Compare Pelton wheel and Kaplan turbine on the basis of type of flow of water, suitability for type of head and flow, construction and control of water.

5) “Use of economiser, super heater and air preheater increasethermal efficiency of thermal power station”. Justify the statement.

6) List major electrical equipment in thermal power station.

7) Explain the following terms in connection with hydro electric power station.

i) Tunnel

ii) Surge tank

iii) Reservior

iv) Tail race

8) Explain the function and material used for the following in nuclear power station.

i) Fuel rod

ii) Control rod

iii) Moderator

iv) Shielding.

9) Classify the types of engines on the basis of strokes, fuel used, type of cooling and arrangement of cylinder.

d) Describe the construction of surface condenser with the help of diagram.

10) Explain the water hammer effect and cavitation in hydro electric power station and state the arrangement to reduce these.

11) Compare Boiling Water Reactor (BWR) and Pressurised Water Reactor (PWR) on the basis of principle, construction, fuel, cooling, cost, steam pressure and temperature.

12) Distinguish between run off river plant with pondage and pumped storage power plant.

13) State for application of diesel power plant.

14) A power station has four consumers with their maximum demand as 40 MW, 30 MW, 20 MW, 50 MW. The maximum demand of power station is 90 MW. Calculate diversity factor. State the significance of diversity factor.

15) Draw air and gas circuit block diagram of thermal power station.

16) Show the schematic arrangement of diesel power station layout and give its principle of operation.

17) Explain how flue gases are cleaned before their journey to atmosphere.

18) Draw diagram showing the basic arrangement of nuclear reactor. State what do you mean by critical size of reactor.

19) State with neat diagram the working and the material used of photo voltaic cells.

20) Draw schematic diagram of solar power plant and how electricity is generated.

21) Describe the construction of boiling water reactor with the help of sketch.

22) Which water turbine should be selected for a water head of 300 m ? Draw its labeled sketch.

23) Describe how gaseous, liquid and solid waste can be disposal off in case of nuclear power plant.