

**6TH SEM./MECH./DME/MECH(PROD.)/MECH(MAINT)/
MECH(IND.INT)MECH(SAND)/2022(S)
TH-3 Power Station Engineering**

Full Marks: 80

Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
 - a. Classify power plant.
 - b. Define specific steam consumptions.
 - c. What is an Air Pre-heater? State its field of use.
 - d. What is Nuclear Reactor?
 - e. What is the function of surge tank in Hydro electric power plant?
 - f. Draw P-V & T-S diagram of Rankine cycle.
 - g. Define Draught.
 - h. Write name of fuels used in Gas Turbine power station?
 - i. What is the function of cooling tower?
 - j. What is the function of steam condenser?

2. Answer **Any Six** Questions 6 x 5
 - a. Write the difference between Jet condenser and Surface condenser.
 - b. State merits and demerits of Gas turbine station.
 - c. State the criteria for selection of site for a Hydel power plant.
 - d. Explain the working principle of ESP.
 - e. Explain fuel storage and supply system in a diesel power plant.
 - f. Differentiate between Captive and Central power plant.
 - g. Differentiate between boiler mountings and accessories.

3. Describe layout of steam power station. 10

4. Explain the working of PWR with neat sketch. 10

5. Explain the working of diesel power plant. 10

6. A simple Rankine cycle works between pressure 28 bar and 0.06 bar. The initial condition of steam being dry saturated. Calculate the cycle efficiency, work ratio & SSC. 10

7. Define compounding. Explain pressure & velocity compounding with neat sketch. 10