

DRONACHARYA COLLEGE OF ENGINEERING

Khentawas, Farrukhnagar, Gurgaon

DEPARTMENT OF MECHANICAL ENGINEERING

SEMESTER: VII

SUBJECT: POWER PLANT ENGINEERING (ME- 407-F)

IMPORTANT QUESTIONS.

- [1] What is CANDU-type nuclear reactor? With sketch explain its principle of working and its main features.
- [2] How can the cost of power generation be reduced? Discuss about the fixed cost.
- [3] Define the following connected load maximum demand diversity factor plant use factor
- [4] A power station is to be built to meet the following electrical load requirements

Time (Hrs.)	0-6 AM	6 to 12AM	12 to 2 pm	2 to 6 pm	6 to 8pm	8 to 12pm
Load (Mw)	120	360	240	400	200	150

Workout the following

- a. Draw the load curve
 - b. Calculate the load factor
 - c. Calculate plant
- [5] With neat sketch explain the characteristic feature of BWR & PWR nuclear reactors.
 - [6] Discuss the following
 - a. Load duration curve
 - b. Energy load curve
 - [7] What are different non-conventional resources? Explain the working of geothermal power plant.
 - [8] Discuss the working of Hydrogen-Oxygen fuel cell.
 - [9] Discuss the important properties required in a good emitter material used in Thermionic emitter
 - [10] Discuss technology Ocean Thermal energy conversion (OTEC). What are the environmental effects as a result of operation of OTEC.
 - [11] Write a short note on the following
 - a. Pollution from nuclear power plant
 - b. Radioactive pollution
 - c. Waste from Reactor

- [12] Explain the factors which should be considered while selecting a site for Hydro-electric power plant and enumerate essential elements of hydro-electric power plant.
- [13] Write short notes on MHD Generators.
- [14] What is meant by Load curve? Explain its importance in power generation.
- [15] What are the requirements of a good boiler? Describe high pressure water boiler. Explain boiler rating and boiler efficiency.
- [16] Describe the function of cooling ponds and cooling towers in thermal station. With help of a neat diagram explain once through cooling system.
- [17] What are the various factors for selecting the site for selecting nuclear power plant? What is the future of nuclear power plant?
- [18] With the help of a neat diagram, explain the working of Gas cooled reactor.
- [19] Explain the construction and operations of different components of hydro-electric power plant.
- [20] Discuss the 'operational', 'economic' and 'thermodynamic' considerations while selecting equipment for a power plant.
- [21] With the help of a simple line diagram, explain the working of a nuclear power plant.
- [22] Explain the function of moderator in Nuclear power plant.
- [23] Explain the following Tariff methods used to calculate the electric current.
- Step meter mode
 - Block rate tariff method
 - Three-part tariff method
- [24] A Consumer has the following connected load
- 10 lamps of 60 watt each
 - 2 Electric heaters of 1000 watts each
- Maximum demand=1500 watts. On the average he uses 8 lamps for 5 hrs. a day and each heater for 3 hrs. a day. Find his
- Average demand?
 - Load factor
 - Monthly Energy consumption
- [25] Write a note on the following:
- Nuclear fission reaction in nuclear power plant
 - Nuclear waste disposal
 - Parameters for site selection in case Hydro-electric power plant.