

'T' Scheme

Sample Question Paper

Program Name : Electrical Engineering Program Group

Program Code : EE/EP/EU

Semester : Third

Course Title : Electric Power Generation

Max. Marks : 70

22327

Time: 3 Hrs.

Instructions:

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data if necessary.
- (5) Preferably, write the answers in sequential order.

Q.1) Attempt any FIVE of the following.

10 Marks

- a) Name any two thermal power stations in Maharashtra with their installed capacity.
- b) List the turbines used in hydro power plant on the basis of water head.
- c) List any two hydro power plant with capacity in Maharashtra.
- d) Give the types of technologies employed in solar power plant.
- e) List the types of technologies employed in biomass based power plant.
- f) List any two wind power plants with installed capacities.
- g) State the term "Black Out".

Q.2) Attempt any THREE of the following.

12 Marks

- a) List any four applications of diesel power plant.
- b) State the classification of hydro power plant based on water head available. Describe working of any one.
- c) Draw and explain photo – voltaic system of solar power plant.
- d) Elaborate salient features of electric generators used in large wind power plant.

Q.3) Attempt any THREE of the following.

12 Marks

- a) Explain working of boiler water reactor (BWR) with neat sketch.
- b) Give the general features of solid, liquid and gas biomass as a fuel for biomass power plant.
- c) Draw and explain horizontal axis small wind turbine.
- d) Describe the importance of load curve.

Q.4) Attempt any THREE of the following.

12 Marks

- a) Classify different types of condensers used in thermal power plant and write their functions.
- b) Draw and explain gas cooled reactor.
- c) Explain with block diagram of squirrel cage induction generator (SCIG).
- d) Describe any four safe practices to be followed with respect to hydro power plant.
- e) A generating station has the following daily load cycle.

Time (Hours):	0-6	6-12	10-12	12-16	16-20	20-24
Load (MW) :	60	70	80	70	50	40

Draw the load curve and find. i) Maximum demand , ii) Unit generated per day, iii) Average load, and iv) Load factor.

Q.5) Attempt any TWO of the following.

12 Marks

- a) Explain Impulse turbine (Pelton wheel) with neat diagram and labeled its all parts.
- b) Explain the working and construction of concentrated solar power (CSP) with neat sketch. Also state their types.
- c) Power station is connected with the loads 28 MW, 22 MW, 4 MW and 9 MW. The peak load on station is 40 MW. The capacity of station is 40 MW. Its annual load factor is 0.5. Find : i) Average load, ii) Energy supplied per year, iii) Demand factor, iv) Diversity factor.

Q.6) Attempt any TWO of the following.

12 Marks

- a) Elaborate the function following components of hydro power plant.
 - i) Surge tank, ii) Penstock, iii) Forebay, iv) Power house, v) Dam, vi) Tail race.
- b) Draw a block diagram of bio chemical waste power plant and explain the process. Also state its advantages (any four).
- c) State any six advantages and disadvantages of interconnected power station (Grid).

'T' Scheme

Sample Test Paper - I

Program Name : **Electrical Engineering Program Group**
Program Code : **EE/EP/EU**
Semester : **Third**
Course Title : **Electric Power Generation**
Max. Marks : **20**

22327

Time: 1 Hour

Instructions:

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data if necessary.
- (5) Preferably, write the answers in sequential order.

Q.1 Attempt any FOUR.

08 Marks

- a) Give the types of nuclear reactors used in nuclear power plant.
- b) Elaborate the meaning of calorific value. Write calorific value of bituminous coal.
- c) List out any two thermal power stations in India with capacity.
- d) Elaborate the function of penstock in hydro power plant.
- e) Classify hydro power plants on the basis of load and head available.
- f) List any two hydro power stations with capacity in Maharashtra.

Q.2 Attempt any THREE.

12 Marks

- a) Draw a neat layout of thermal power station and label it.
- b) State any two advantage and disadvantages of hydro power plant.
- c) Describe the energy conversion process in hydro electric power plant.
- d) Explain working of pressurized water reactor (PWR) with neat sketch.
- e) List any four applications of diesel power plant.

'I' Scheme

Sample Test Paper - II

Program Name : **Electrical Engineering Program Group**
Program Code : **EE/EP/EU**
Semester : **Third**
Course Title : **Electric Power Generation**
Max. Marks : **20**

22327

Time: 1 Hour

Instructions:

- (1) All questions are compulsory.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data if necessary.
 - (5) Preferably, write the answers in sequential order.
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Q.1 Attempt any FOUR.

08 Marks

- a) State the term "Black Out".
- b) Define cold reserves and hot reserves of a power system.
- c) Give the types of solar power technologies.
- d) State the location and installed capacity of wind power plants in India. (Any two).
- e) Give the types of biomass based power plant technologies.
- f) Write any two salient features of electric generators used in large wind power plant.

Q.2 Attempt any THREE.

12 Marks

- a) State the advantages of bio-chemical based power plant.
- b) Give the various types of solar collectors and explain any one.
- c) Explain with block diagram of wound rotor induction generator (WRIG).
- d) Describe the importance of load curve.
- e) Maximum demand of generating station is 40 MW and connected load is 70 MW. Its supplies the energy units = 28×10^7 per year.

Find : i) Load factor, ii) Demand factor on plant.