

Code: EE4T3

II B.Tech - II Semester – Regular Examinations – May 2016

ELECTRICAL POWER GENERATION (ELECTRICAL AND ELECTRONICS ENGINEERING)

Duration: 3 hours

Max. Marks: 70

PART – A

Answer *all* the questions. All questions carry equal marks

11x 2 = 22 M

1)

- a) Give the merits of hydro electric power plant.
- b) Explain Mass curve.
- c) What is pulverization and give its importance?
- d) Why super heaters are used in thermal power plants?
- e) What are the different types of the boilers?
- f) What are the fissile and fertile materials?
- g) Write down the principle involved in the solar energy conversion.
- h) What are the different types of tariff?
- i) Define the term diversity factor.
- j) What are the different types of gas insulated substations?
- k) What is the difference between main bus bar and transfer bus bar system?

PART – B

Answer any **THREE** questions. All questions carry equal marks.

3 x 16 = 48 M

2)

a) Explain the functions of different components in storage reservoir plants. 8 M

b) Show that the average power in a hydel station is given by $P = 3.14\eta KFAH \times 10^{-4} \text{kw}$ when A in sq.km, F in mm, H in mts 8 M

3)

a) Explain principle of operation of Electro static precipitator with neat diagram. 8 M

b) Discuss the following: i) Economizers ii) Condensers
iii) Cooling Towers and iv) Chimney 8 M

4)

a) Discuss different types of control rods that are used in Nuclear reactors. 8 M

b) Explain principle and operation of wind energy conversion. 8 M

5)

- a) Explain the following: i) Capacity factor
 ii) Utilization factor iii) Plant use factor 8 M

b) A Domestic lighting installation having fifteen 60 watt lamps is operated as follows

5 lamps from 6 p.m till 8 p.m.

10 lamps from 8 p.m. till 10 p.m.

6 lamps from 10 p.m. till 12 p.m.

Determine the demand factor and the daily load factor. 8 M

6)

- a) Explain construction, installation and maintenance of Gas Insulated substation. 8 M

b) Discuss different types of bus-bar arrangements of Air insulated sub-station. 8 M