



--	--	--	--	--	--	--	--	--	--

P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

Fourth Semester, B.E. - Electrical and Electronics Engineering

Semester End Examination; June/July - 2015

Power Plant Engineering

Time: 3 hrs

Max. Marks: 100

Note: i) Answer FIVE full questions, selecting ONE full question from each Unit.

ii) Assume suitable missing data if any.

UNIT - I

1. a. What are the points to be considered in selecting site for Hydro – electric power plant? 5
- b. With the help of schematic arrangement. Explain the functioning of Hydro-Electric power plant. 10
- c. Describe the classification of hydroelectric power plants. 5
- 2 a. Explain in detail the working of thermal power – plant by drawing neat schematic arrangement. 10
- b. What are the points to be considered for the choice of site for steam (thermal) power station? 5
- c. What are the equipments used in the steam power station? Mention in one line their importance. 5

UNIT - II

- 3 a. With the schematic diagram explain the working concept of nuclear power plant. 10
- b. List the advantages and disadvantages of nuclear power plant. 5
- c. Write the points considered for the selection of sites for nuclear power plant. 5
- 4 a. Explain the working of Diesel power plant with the schematic diagram. 10
- b. List the advantages and disadvantages of diesel power plant. 5
- c. Explain the various characteristics of diesel engines for selecting the diesel engine. 5

UNIT - III

- 5 a. Explain with block diagram wind energy conversion system. 10
- b. Explain distributed generation. 3
- c. List the advantages and limitation of non conventional energy sources. 7
6. a. With a neat sketch explain the working of geothermal power plant. 10
- b. Explain in detail working of mini, and micro power generation. 10

UNIT - IV

- 7 a. Define the terms,
- i) Average load ii) Load factor iii) Plant use factor
 - iv) Maximum demand v) Demand factor vi) Connected load 10
 - vii) Plant capacity factor viii) Load curve iv) Load duration curve
 - x) Diversity factor.
- b. What are the points to be considered during the selection of choice of size and number of generating units? 5
- c. What are the different curves useful in the system operation? 5
- 8 a. What is tariff? Explain various types of tariffs. 10
- b. The daily demands of three consumers are given below,

	Time	Consumer 1	Consumer 2	Consumer 3
1	12 midnight to 8 a.m.	No load	200 W	No load
2	8 a.m. to 2 p.m.	600 W	No load	200 W
3	2 p.m. to 4 p.m.	200 W	1000 W	1200 W
4	4 p.m. to 10 p.m.	800 W	No load	No load
5	10 p.m. to midnight	No load	200 W	200 W

10

Plot the load curve and find;

- i) Maximum demand of individual consumer
- ii) Load factor of individual consumer
- iii) Diversity factor
- iv) Load factor of station.

UNIT - V

- 9 a. What are the different types of Automatic controls available in the operation of power system? Explain them briefly. 10
- b. Explain the concept of load sharing and transfer of load between stations. 10
- 10 a. What is the necessity of phase angle control? 10
- b. Explain resistance grounding in detail with the necessary diagram. 10

* * * * *