

B.E. Electrical (Electronics & Power) Engineering (Model Curriculum) Semester - V  
**TE102A - Power Plant Engineering**

P. Pages : 2

Time : Three Hours



**GUG/S/23/13863**

Max. Marks : 80

- 
- Notes :
1. Read the question paper carefully (Branch, Semester, Scheme) before attempting the questions.
  2. Every question has equal weightage.
  3. Use of programmable calculator is prohibited.
  4. Assume suitable data wherever necessary.
  5. Draw neat and proper diagram/sketches.
  6. Don't use read pen for writing the answers.
  7. Don't write any other comments except answers of questions.

1. a) State and Explain terms: 8
- i) Diversity Factor.
- ii) Group Diversity Factor.
- iii) Peak Diversity Factor.
- b) Explain different types of loads with neat sketch. 8

**OR**

2. a) A power plant has an initial invested cost of Rs.  $2 \times 10^8$ . Assuming a salvage value of 15%, interest rate and useful life of 25 years, calculate the annual depreciation reserve by- 8
- i) Straight line method
- ii) Sinking fund method
- iii) Fixed percentage method
- iv) Accumulated depreciation at the end of 10<sup>th</sup> years.
- b) Explain the term depreciation and method to obtain depreciation charges. 8
3. Explain the water-steam flow system of thermal power plant. 16

**OR**

4. a) State and discuss advantages and disadvantages of using pulverized coal in modern thermal power plant. 8
- b) Draw and explain flue gas flow system with necessary equipment's of a thermal power plant. 8
5. a) State and explain different equipment's of fuel system in a diesel engine cooling system. 8
- b) Draw and explain the operation of an closed cycle gas turbine plant. 8

**OR**

6. a) Draw and explain the different equipment's of a closed circuit of a diesel engine cooling system. 8
- b) Draw and explain the operation of an open cycle gas turbine plant. 8
7. a) State and explain terms: 8
- i) Storage reservoir. ii) Surge tank
- iii) Spillway iv) Tailrace
- b) Explain the generalized nuclear power plant with its main parts. 8
- OR**
8. a) Explain the governing and speed regulation of Pelton turbine. 8
- b) Explain the Francis turbine with neat sketch. 8
9. a) Explain different types of wind mills use to generate wind energy. 8
- b) Mention and explain different types of instruments used in power plants. 8
- OR**
10. a) Explain direct water cooling of turbo generator. 8
- b) Classify the different cooling system of power transformer. 8

\*\*\*\*\*