B.E.(with Credits)-Regular-Semester 2012-Electrical Engineering (E. & P.) Sem VII

EP - Electrical Energy Utilization

P. Pages : 2 **GUG/W/16/6558**

Time : Three Hours * 4 6 8 3 * Max. Marks : 80

Notes :
1. All questions carry equal marks.
2. All questions are compulsory however the students may avail internal choice.
3. Illustrate your answers wherever necessary with the help of neat sketches.
4. Due credit will be given to neatness and adequate dimensions.
5. Assume suitable data wherever necessary.
6. Use of slide rule, drawing instruments and non programmable calculator is permitted.

1. a) What is electric drive? What are the advantages of electric drive? **8**

b) Explain various types of electric drives with advantages and disadvantages. **8**

OR

2. a) What are the advantages of equipment operated from high frequency supply ? **8**

b) Give a couple of examples for impact loads. Rolling mills and shearing machines. **8**

3. a) What are the advantages and disadvantages of direct and indirect arc furnaces ? **8**

b) Explain with a neat sketch the principle of core type induction furnaces. **8**

OR

4. a) Explain the construction and working principle of dielectric heating. **8**

b) Compare high frequency and power frequency coreless furnaces. **8**

5. a) What is resistance welding ? **4**

b) Give the various applications of electric welding. **4**

c) Explain any two types of electric arc welding. **8**

OR

6. a) Explain the welding control circuits. **8**

b) What are advantages of flash butt welding over simple butt welding? **8**

7. a) Explain the laws of illumination. **8**

b) Define : **4**
i) Candle power
ii) Lux

c) A room with an area of 6 x 9 m is illustrated by ten 80-w lamps. The luminous efficiency of the lamp is 80 lumens / w and the coefficient of utilization is 0.65 find the average illumination. **4**

OR

8. a) Explain with neat sketch electric incandescent lamp. **8**

b) Explain the methods of lighting calculations. **8**

9. a) Explain the various systems of track electrification ? **8**

b) Compare the DC and AC tractions. **8**

OR

10. a) Define the following : **8**

i) Crest speed ii) Average speed

iii) Schedule speed iv) Schedule time

b) Explain speed time and speed distance curves for suburban service. **8**

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