Total No. of Questions : 10] [Total No. of Printed Pages : 3

Roll No. .....

EX–501

B. E. (Fifth Semester) EXAMINATION, Dec., 2011

(Electrical and Electronics Engg. Branch)

UTILISATION OF ELECTRICAL ENERGY

(EX–501)

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note : Attempt *five* questions in all. *One* question from each Unit is compulsory. All questions carry equal marks.

Unit–I

1. (a) A lamp of 1000 C. P. is hung 10 m over the centre floor of hall 15 m square. Find the illumination at the point below lamp and at the corners, neglecting the reflection from walls and ceilings.

   (b) What are the objects to be achieved for good street lighting and what are main faults to be avoided ?

Or

2. (a) Find the candle power of a lamp to produce illumination of 8 lux on a surface 5 metres from lamp (i) when rays are normal to the surface, (ii) when the rays are inclined to normal at 60°.

   (b) Compare gas discharge lamps with fluorescent lamps.

P. T. O.

Unit – II

3. (a) Why is electric heating preferred over other form of heating ? Give some typical heating alloys and their maximum temperature limit.

   (b) Explain the process of electric arc welding and qualities of a good weld.

Or

4. (a) Give the principle and applications of dielectric heating.

   (b) Explain the laws of electrolysis.

Unit – III

5. Explain the following :

   (a) Specific energy consumption

   (b) Coefficient of adhesion

Or

6. (a) A train has a scheduled speed of 30 kmph over a level track, distance between stations being 1 km. Station stopping time is 20 sec. Assuming braking retardation of 3 kmphps and maximum speed 25% greater than average speed, calculate acceleration to run the service.

   (b) Explain mechanics of train movement.

Unit – IV

7. (a) Compare the various methods of electric braking.

   (b) Which factors do govern the service capacity and rating of the machine ?

Or

8. (a) What is the importance of load equalisation and how is it done ?

   (b) Give the criteria for the selection of motor for a particular application.

Unit – V

9. What are the characteristics required for the traction motor ? Compare the suitability of single-phase and three-phase motor for it.

Or

10. (a) Write a note on transfusion requirement of traction motor.

    (b) Why do electrical vehicles perform better than mechanical motor ?