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BIEEE-005

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DIPLOMA IN ELECTRICAL ENGINEERING (DELVI)

Term-End Examination

December, 2012

BIEEE-005 : UTILIZATION OF ELECTRICAL ENGINEERING

Time : 2 hours *Maximum Marks : 70*

Note : *Question No. **1** is **compulsory**. Attempt **any four** questions out of the Q. No. **2** to Q. No. **8**. All questions carry **equal** marks.*

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1. Choose the correct answer out of the given alternatives. **2x7=14**

(a) Radiant efficiency of the luminous source depends on

(i) temperature of the source

(ii) wave length of light rays

(iii) shape of the source

(iv) all of the above

(b) Luminous flux is

(i) the rate of energy radiation in the form of high waves

(ii) the part of light energy, radiated by sun that is received on earth.

(iii) measured in lux.

(iv) none of these.

(c) Carbon are lamps are commonly used in

(i) cinema projectors

(ii) domestic lighting

(iii) factory lighting

(iv) street lighting

(d) Which of the following material is most commonly used for the filaments in incandescent lamps ?

(i) Tungsten (ii) Osmium

(iii) Tantalum (iv) Silver

(e) Halogen lamps have the advantage(s) of

(i) reduced dimensions of the lamp

(ii) longer life (about 2000 hours)

(iii) high operating temperature with increased luminous efficiency

(iv) all of the above

(f) In case of GLS lamps the increase in supply voltage reduces.

(i) power consumption

(ii) lumens output

(iii) life

(iv) efficiency

(g) The colour of the light given out by a sodium vapour discharge lamp is

(i) pink (ii) bluish green

(iii) yellow (iv) blue

2. (a) What are the advantages of electric heating ? Give classification of various methods of electric heating. 7

(b) Discuss the methods of temperature control of resistance ovens. 7

3. Describe the construction and operation of an electric arc furnace. 14

4. (a) Discuss the advantages of electric drives. 7

(b) Compare the group drives and individual drives in industrial environment. 7

5. (a) Compare dc and ac drives. 7

(b) State the different between active and passive torques with two examples of each. 7

6. (a) What are the various traction systems in practice in our country ? 7

(b) Define 'crist speed' and 'schedule speed' and discuss the factors which affect the schedule speed of a train. 7

7. (a) Explain the working principle of thermo-electric refrigeration system. 7

(b) With the help of a circuit diagram, explain the working of a water cooler. 7

8. Write short notes on ***any four*** of the following : **3.5x4=14**

(a) Factory lighting

(b) Electric Arc Welding

(c) Selection of motors for industrial drive.

(d) Domestic air conditioning

(e) Incandescent Lamps

(f) Three-phase induction motors for traction.