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BIEEE-005

DIPLOMA IN ELECTRICAL ENGINEERING

00045

Term-End Examination

June, 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.*

1. Choose the correct alternative out of the given alternatives. **7x2=14**

(a) Light :

(i) is a form of heat energy

(ii) is a form of electrical energy

(iii) consists of electromagnetic waves

(iv) consists of shooting particles

(b) Candle power is :

(i) the luminous flux emitted by the source per unit solid angle.

(ii) the light radiating capacity of a source in a given direction.

(iii) the unit of illumination

(iv) none of these

(c) The illumination at a surface due to a source of light placed at a distance 'd' from the surface varies as :

(i) $1/d^2$ (ii) $1/d$

(iii) d (iv) d^2

(d) Halogen lamps are useful for the illumination of :

(i) airports

(ii) parks and large gardens

(iii) play fields

(iv) all of the above

(e) The filament of a GLS lamp is made of :

(i) aluminium (ii) tungsten

(iii) carbon (iv) copper

(f) When a sodium vapour lamp is switched on, initially the colour is :

(i) Red (ii) Pink

(iii) Yellow (iv) Blue

(g) The mercury vapour lamp gives light of :

(i) Pink colour

(ii) Yellow colour

(iii) Greenish blue colour

(iv) Red colour

2. (a) Discuss advantages of electric heating as compared to other heating methods. 7

(b) State the desirable properties of a heating element. 7

3. Describe the constructional features of a resistance oven. 14

4. (a) State the component parts of the electric drives. 7

(b) What are various factors which decide the choice of an electric drive for industrial application ? 7

5. (a) Discuss the motoring and braking operations of an electric drives in both directions, forward and reverse taking hoist as an example. 7

(b) Give the characteristic of dc shunt motor. Why are such motors not suitable for traction purposes ? 7

6. (a) State the main requirements for an ideal traction system. 7

(b) What do you understand by speed - time curves ? What is its use in practice ? 7

7. Describe complete arrangement of centrally air conditioning plant. 14

8. Write short notes on ***any four*** of the following : $4 \times 3\frac{1}{2} = 14$

(a) Flood lighting

(b) Inductance Furnace

(c) Domestic Refrigerator

(d) Arc Lamps

(e) Ultrasonic Welding

(f) Linear induction motor for traction