DIPLOMA IN ELECTRICAL ENGINEERING (DELVI)

Term-End Examination

December, 2013

BIEEE-005 : UTILIZATION OF ELECTRICAL ENGINEERING

Time : 2 hours *Maximum Marks : 70*

Note : *(i)* *Question No. 1 is compulsory.*

(ii) *Answer any four questions from q.no.2 to q.no.8.*

1. Choose correct answer from the options : 2x7=14

    (a) Which of the following lamps will give monochromatic light ?

      (i) Fluorescent tube

      (ii) Sodium vapourlamp

      (iii) Mercury vapour lamp

      (iv) GLS lamp

    (b) Luminous efficacy of fluorescent tube is :

      (i) 60-65 lm/watt

      (ii) 15-20 lm/watt

      (iii) 100-200 lm/watt

      (iv) 150-250 lm/watt

(c) The expected life of incandescent lamp :

    (i)   500 Hrs

    (ii)   1000 Hrs

    (iii) 100 Hrs

    (iv) 10,000 Hrs

(d) The p.f. of the fluorescent tube alone is :

    (i)   0.8 lag

    (ii)   0.5 lag

    (iii) 1

    (iv) 0.8 lead

(e) Quadrilateral speed time curve is used for :

    (i)   Suburban service

    (ii)   Urban service

    (iii) main line service

    (iv) suburban and urban service

(f) In arc welding the temperature of the arc is of the order of :

    (i) $150°C$

    (ii) $1,540°C$

    (iii) $3,500°C$

    (iv) $10,000°C$

(g) For welding aluminium alloys, the method used is :

    (i)   tungsten arc welding

    (ii)   Acetylene oxygen gas welding

    (iii) DC arc welding

    (iv) AC arc welding

2. (a) State and explain the laws of illumination.
   (b) What is flood-lighting and where it is used ? **2x7=14**

3. (a) What are the requirements of good lighting ? Explain in detail. **2x7=14**
   (b) State atleast four differences between Incandescent lamp and Fluorescent lamp.

4. (a) State four applications of dielectrically heating. **2x7=14**
   (b) Why only DC supply is used in case of carbon arc welding ?

5. What is regenerative braking ? Discuss the suitability of DC shunt and series motor for electrical regenerative braking. **14**

6. What are the advantages and disadvantages of electric traction ? **14**

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

8. Answer **any two** of the following : **2x7=14**
   (a) Flood lighting
   (b) Domestic refrigerator
   (c) arc lamp
   (d) modern welding techniques

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