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C14-EE-501

4636

BOARD DIPLOMA EXAMINATION, (C-14)
OCT/NOV—2018
DEEE—FIFTH SEMESTER EXAMINATION
ELECTRICAL UTILISATION

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

- 1.** Define the following terms regarding electric lighting:
(a) Luminous intensity
(b) Reflection factor
- 2.** List different types of lamps used for illumination for the following situations:
(a) Domestic
(b) Industrial
(c) Advertisement
- 3.** A lamp having MSCP of 800 is suspended at a height of 10 meters. Calculate the illumination directly below the lamp at the working plane.

4. State any ^{*}six advantages of electric heating.
5. State the principle of operation of induction furnace.
6. List different types of electrodes used for welding.
7. Draw a neat block diagram of a refrigerator and name the parts.
8. State the function of any three components in the electric circuit of an Air-condition.
9. State the need of power saving devices.
10. List any six advantages of LED lamps over other types of lamps.

PART—B

10×5=50

Instructions : (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

(3) The answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. State and explain the laws of illumination with relevant sketches.
12. A drawing hall 30 m ×15 m with ceiling height of 5 m is to be provided with a general illumination of 120 lux. Taking the coefficient of utilisation of 0.5 and depreciation factor of 1.4, determine the number of fluorescent tubes required, their spacing, mounting height and total wattage. Take luminous efficiency of fluorescent tube as 40 lumen/watt for 89 watt tube.
13. (a) Explain indirect resistance heating with a neat sketch.
(b) Explain direct arc furnace with a neat sketch.
14. Explain different methods of temperature control of resistance furnaces with relevant sketches.

15. (a) Explain the principle of butt welding with a neat diagram.
(b) Explain the principle of spot welding with a neat diagram.
16. (a) Explain the characteristics of welding generator with a neat sketch.
(b) Explain the principle of operation of welding transformer with a neat sketch.
17. Draw the circuit diagram of lighting, ignition, self-starting and battery charging of four wheelers.
18. (a) Explain the concept of energy auditing and management.
(b) List any five advantages of remote operated power utility devices.
