



C14-EE-501

4636

**BOARD DIPLOMA EXAMINATION, (C-14)
SEPTEMBER/OCTOBER - 2020
DEEE—FIFTH SEMESTER EXAMINATION**

ELECTRICAL UTILIZATION

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 (a) MSCP, (b) MHCP and (c) MHSCP.
2. List different types of lamps used for illumination for (a) domestic, (b) industrial and (c) advertisement applications.
3. State the laws of illumination.
4. State the different types of materials used for heating elements.
5. List any six industrial applications of induction furnace.
6. What are the different types of electric welding?
7. Name four basic stages of a refrigeration cycle.
8. Draw the electric circuit diagram of a two-wheeler.
9. Compare between compact fluorescent (CF) lamps and tungsten filament lamps in any six aspects.
10. Draw the automatic temperature control circuit for iron boxes.

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PART—B

10×5=50

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

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

(3) Answers should be comprehensive and the criteria for valuation are the content but not the length of the answer.

- 11.** (a) Explain the production of light by ionization with a neat sketch. 5
(b) Define (i) space-height ratio and (ii) luminous efficiency related to electric lighting. 5
- 12.** In a street lighting scheme, two lamps with candle power of 500 are mounted 5 metres above the ground level. The distance between the posts is 10 metres. Determine the illumination (a) just below the lamp posts and (b) at the mid-point between the posts. 10
- 13.** Explain the principle of direct resistance heating with neat sketch. 10
- 14.** Explain the principle of operation of coreless type induction heating with a neat sketch. 10
- 15.** (a) Explain the principle of butt welding with a neat sketch. 5
(b) Explain the principle of spot welding with a neat sketch. 5
- 16.** (a) Explain the sequence weld with a neat block diagram. 5
(b) Explain the principle of operation of welding transformer with a neat sketch. 5
- 17.** State the function of each component in the electric circuit of a refrigerator with a neat sketch. 10
- 18.** Explain the working of magnetic induction lamps with a neat sketch. 10
