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C16-EE-403**6442**

BOARD DIPLOMA EXAMINATION, (C-16)
OCTOBER/NOVEMBER—2023
DEEE – FOURTH SEMESTER EXAMINATION
ELECTRICAL UTILISATION AND TRACTION

*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 terms (a) lumen and (b) glare.
2. List the types of lamp fittings.
3. List the various advantages of electric heating.
4. State the principle of dielectric heating.
5. What is meant by energy audit?
6. List the benefits of LED lamps over other types of lamps.
7. Define co-efficient of adhesion. What are the methods to improve co-efficient of adhesion?
8. Define maximum speed, average speed, and schedule speed of a train.
9. Write a brief note on interrupters.
10. List the requirements of train lighting.

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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 criterion for valuation is the content but not the length of the answer.

- 11.** Explain the phenomenon of production of light by (a) excitation, (b) ionization and (c) fluorescence and phosphorescence. 10
- 12.** In a street lighting scheme, lamps having luminous intensity of 600 candela are hung at a height of 6 m. The distance between two lamps posts is 8 m. Find the illumination under the lamp and at centre in between lamp posts. 10
- 13.** Draw a neat sketch of Ajax Wyatt furnace and explain. 10
- 14.** Draw and explain the working of illumination control using LDR. 10
- 15.** An electric train is accelerated at 1.5 kmphps and is braked at 3 kmphps. The train has an Average speed of 45 kmphps on a level track of 1500 meters between stations. Determine (a) actual time of run, (b) maximum speed, (c) distance travelled before applying brakes and (d) schedule speed. Assume time for stop as 15 seconds and run according to trapezoidal speed time curve. 10
- 16.** Derive an expression for the specific energy consumption for a trapezoidal speed time curve. 10
- * **17.** Explain feeding post with a neat sketch. 10
- 18.** (a) Explain any one methods of controlling temperature of resistance heating. 5
(b) Explain END-ON generation. 5

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