C23-EE–**401**

23435

BOARD DIPLOMA EXAMINATION, (C-23)

MARCH/APRIL—2025

DEEE – SECOND YEAR EXAMINATION

ELECTRICAL INSTALLATION AND ESTIMATION

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.   List different types of MCBs.

2.   State the reasons for not using fuse in neutral wire.

3.   Define service mains and state different types of service mains.

4.   Draw the wiring layout of an irrigation pump-set of 3 HP, 400 V, 3-phase, 50 HZ induction motor.

5.   Calculate the number of poles and cross arms required for 11 kV transmission line of 2 km distance with a span of 80 m.

6.   List the materials that are used in the earth pit surrounding the earth electrode.

7.   List different tests to be conducted before energizing a newly constructed electrical installation.

8. A residential area has a total connected load of 250 kW. The diversity factor is 1·5 and the power factor is 0·9. What transformer capacity is required?

9. State the common electrical hazards.

10. List different fire extinguishers in common use.

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PART—B 10×5=50

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

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

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

11. Write the merits and demerits of concealed conduit wiring system.

12. A 400 V, 3-phase, 2 no's of induction motor is to be installed in a workshop as shown in figure. Prepare a schedule with quantity of materials. Assume missing data, if any.
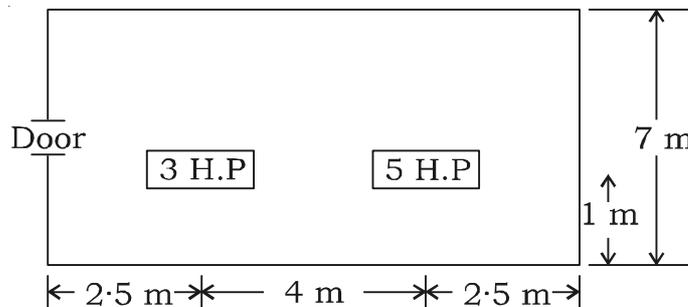
13. Draw the wiring layout for a workshop/electrical laboratory.

14. Estimate the quantity of materials required for the electrification of an irrigation pump set having a 3-phase, 440 V, 5 kW squirrel-cage induction motor. The pump set shed dimensions are 5 m × 3 m × 3 m. The distance between LT pole and pump set shed is 10 m. Assume any missing data.

15. Estimate the quantity of materials required for a 11 kV, 3-phase overhead line with 6/1 × 2·59 mm ACSR conductor for 1 km long on 8 m PSCC poles. The span between two poles is 75 m. Assume missing data if any.

16. Draw a neat sketch of pipe earthing and list out the quantity of materials required.

17. Describe the test procedure for continuity of wiring in an electrical installation.

18. Describe the procedure of first aid for shock treatment to an electrocuted person.

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