



C14-EE-404

**4464**

**BOARD DIPLOMA EXAMINATION, (C-14)**

**OCT/NOV—2016**

**DEEE—FOURTH SEMESTER 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. Classify different types of cable.
2. State the factors on which the choice of wiring system depends.
3. Explain why the fuse must be used in phase and must not in neutral wire.
4. Draw the single-line diagram of an electrical installation of motors.
5. What are the factors to be considered while selecting a system of wiring?
6. List the important accessories used in service mains.
7. Classify the earthing along with one application in each system of earthing.
8. Write the method of reducing earth resistance.
9. What is the load survey in RES?

10. Write down the permissible earth resistance value for—

- (a) 1 hp, 1-phase, 230 V, 50 Hz motor;
- (b) flour mill of 3-phase, 10 hp motor;
- (c) 10 MW power generating plant.

**PART—B**

10×5=50

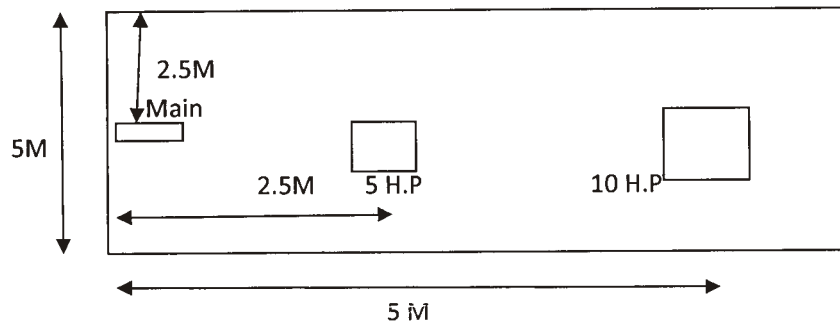
**Instructions :** (1) Answer *any five* questions.

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

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

11. Explain with a neat sketch the construction and working of HRC fuse and mention advantages and disadvantages.

12. Two 3-phase, 400 V induction motors are installed in a workshop of 7.5 m × 5 m × 3.5 m (plan is shown below) :



Prepare the list of materials required for the power wiring installation. Assume missing data if required (metal surface conduit system).

13. Estimate the quantity of materials required for one room of 6 m × 5 m × 3.5 m to be wired from single-phase supply which is provided with 3 lamps (60 W), two fans (80 W), two 5 A sockets (100 W) and 1 power socket 15 A (1000 W). Draw the installation plan for CTS system. Assume missing data, if any.

- 14.** Draw wiring <sup>\*</sup> layout of a residential building with two-bed room house.
- 15.** Draw a neat sketch of pole-mounted substation and estimate the materials required.
- 16.** Estimate the materials required for a pipe earthing with neat sketch.
- 17.** Estimate the quantity of a material required for an erecting 11 kV distribution line of 7 km long. Assume one cut point, two 90 degree angle points and one road line (50 m width) crossing. Assume missing data, if any (take span 70 m).
- 18.** What are the departmental procedure steps to be followed to obtain domestic service connection?

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