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BOARD DIPLOMA EXAMINATION, (C-16)

JUNE/JULY—2022

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. Write the full names of *(a)* CTS, *(b)* DPST and *(c)* TPICN.

2. What are the factors to be considered while selecting a wiring system for newly proposed building?

3. What are the different sizes of switches?

4. Calculate the size of the cable for the given 3-Phase, 5 HP, 440 V Induction motor.

5. Distinguish between lighting sub circuit and power sub circuit.

6. List the different types of service mains.

7. State the factors on which earth resistance depends.

8. What is the need of single phase preventer in an irrigation pump set panel?

9. What are the tests to be conducted before energization of electrical installation?

10. Write IE rules related to domestic and power wiring system.

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. What are the types of electrical wiring systems and explain about internal conduit wiring system?

12. Estimate the quantity of material and its cost for CTS system of wiring in a house whose plan is shown in Figure No. 1. Provide one socket in kitchen, hall and bed room 1 and 2. DB-Distribution Board; D-Doors; Lamp = 60 Watts; Fan = 80 Watts; EF = 60 W; Wall Thickness = 30 cm; Ceiling Height = 3·5 m; assume missing data if any.

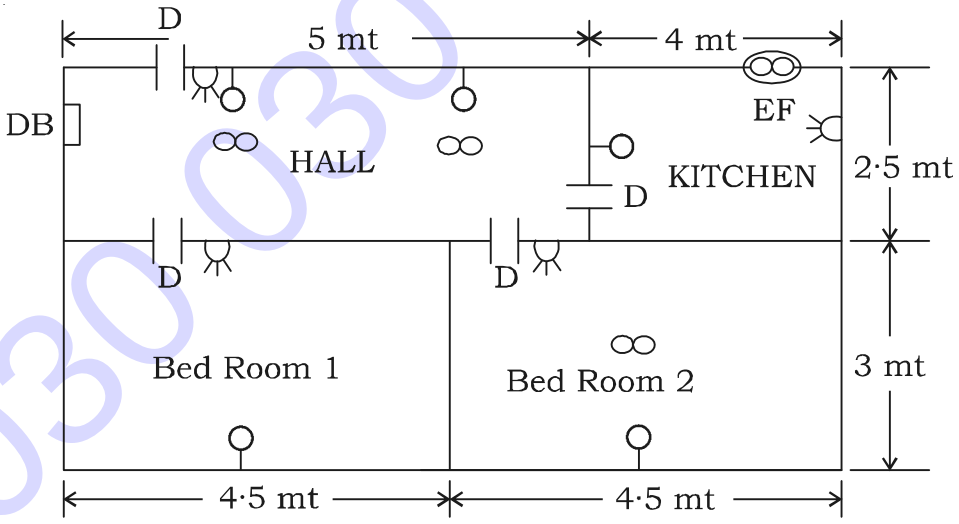

Figure No. 1

13. Draw the wiring layout of a big hotel with five storied building and incorporate with lift facility.

14. Estimate the quantity of the material required for installation of agricultural pump set motor 7·5 HP, 400 V, 50 Hz, 3-Phase Induction motor using star-delta starter panel. The supply to the pump is to be taken from an existing over head LT three phase distribution line, 15 m away from pump set (5 m × 3 m) use surface conduit wiring system and also draw the wiring layout of an installation. Assume any missing data.

15. Estimate the quantity of material and cost for extending a single phase LT distribution line over a length of 1 km using 9 m PSCC poles. Take span as 60m, 7/2·59 AAAC conductor.

16. Prepare the quantity estimate for erecting a 100 kVA, 11 kV/400 V pole mounted distribution transformer with neat diagram clearly mention the specifications and also indicate the earth pits in the substation yard.

17. Explain the plate earthing with a neat diagram and indicate dimensions. Estimate the material required.

18. What are the important tests to be conducted before energizing a domestic wiring installation and explain any one of them?

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