MODEL PAPER – FORMATIVE ASSESSMENT-1

C-23-EE-401

BOARD DIPLOMA EXAMINATION, (C-20)

DEEE – FOURTH SEMESTER EXAMINATION

EE-401 : ELECTRICAL INSTALLATION AND ESTIMATION

Time: 90 Minutes Total Marks: 40

PART-A **(1 x 4) + (4 x 3) = 16**

Instructions:

i. **Answer all five questions.**
ii. **First question carries four marks and remaining each question carries three marks.**
iii. **Answers should be brief and straight to the point and shall not exceed five simple sentences**

1. (a) State the full form of VIR related to cables.

   (b) _____ is example for totally enclosed type fuse

   (c) The line that brings electrical energy from the supplier's distributing line to the consumer premise is known as service line. (True/False).

   (d) The total load in any sub-circuit in lighting load should not exceed _____ watts.

2. List different types of main switches (CO1)
3. List different wiring accessories (CO1)
4. Draw the wiring layout for a electrical laboratory. (CO2)
5. Calculate the size of the cable required for 10 HP, 415 V, 3-phase, 50 Hz squirrel cage induction motor. Assume efficiency of the motor as 85% and power factor as 0.8 lagging. (CO2)

PART-B **3 X 8 = 24**

Instructions:

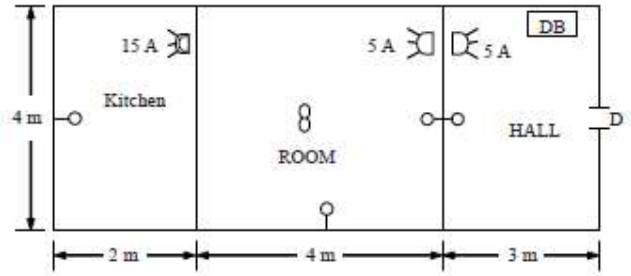
i. **Answer all three questions.**
ii. **Each question carries eight marks.**
iii. **The answers should be comprehensive and the criteria for valuation are the content but not the length of the answer.**

6. (a) Explain Surface Conduit system of wiring with legible sketches. (CO1)

(OR)

(b) Explain Concealed Conduit wiring with legible sketches (CO1)

7. (a) The plan of a residential building is shown in Fig. It is to be provided with CTS system of wiring. Estimate the materials required and its cost. Wattage of Lamps = 60 W, Fan = 80 W, 5 A socket = 100 W, 15 A socket = 1000 W. Assume any missing date. (CO2)



Fig

(OR)

(b) Draw the wiring layout for a electrical laboratory having the following motors

i) 10 Hp Motor ii) 5 HP motor iii)1 H.P Motor (CO2)

8. (a) A 7 H.P (metric), 415 V, 3-phase, 50 Hz squirrel-cage Induction motor is to be installed in a floor mill, the plan of which is shown in Fig. Show the layout of wiring diagram and estimate the quantity of materials required and their approximate cost. Assume any missing data. (CO2)

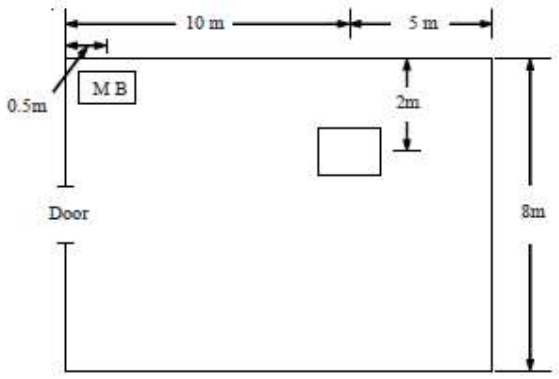


Fig 2.23 : Layout of Floor Mill

(OR)

(b) A submersible irrigation pump set of 10 H.P, 3-phase, 400V, 50Hz motor positioned at a depth of 38m in a tube well from the ground level. The distance between the nearest L.T pose and switch control room is 10m and distance between switch control room and tube well is 3m. Estimate the quantity of materials required and their cost. (CO2)

UNIT TEST II - MODEL PAPER – FORMATIVE ASSESSMENT-2

C-23-EE-401

BOARD DIPLOMA EXAMINATION, (C-20)

DEEE – FORTH SEMESTER EXAMINATION

EE-401 : ELECTRICAL INSTALLATION AND ESTIMATION

Time: 90 Minutes Total Marks: 40

PART-A **(1 x 4) + (4 x 3) = 16**

Instructions:

i. Answer all five questions.
ii. First question carries four marks and remaining each question carries three marks.
iii. Answers should be brief and straight to the point and shall not exceed five simple sentences

1. (a) In 400 V Distribution line, _____ insulator is used at tension point

(b) Cross arms are not necessary for 11 kV distribution line (True/False)

(c) Water can be used to extinguish the fire due to electric short circuit (True/False)

(d) The value of earth resistance to be maintained at a work shop is ____ ohms.

2. Estimate the number of poles required for a 11kV, 3-phase overhead line for 2km long with a span of 75 m. (CO2)
3. State the purpose of earthing. (CO3)
4. List different tests to be conducted before energizing a new electrical installation (CO4)
5. List safety equipment used while working with electricity (CO5)

PART-B **3 X 8 = 24**

Instructions:

i. Answer all three questions.
ii. Each question carries eight marks.
iii. The answers should be comprehensive and the criteria for valuation are the content but not the length of the answer.

6. (a) Estimate the quantity of material required for a 11kV, 3-phase overhead line with 6/1 × 2.59 mm ACSR conductor for 1km long on 8m PSCC poles. The span between two poles is 70 m (CO3)

(or)

(b) Draw a neat sketch of plate earthing and estimate the quantity of materials required. (CO3)

7. (a) Calculate the regulation of a distribution line with 7/2.11 mm ACSR conductor which is emanating from Distribution transformer, the load particulars with distance are shown in Fig. (CO4)

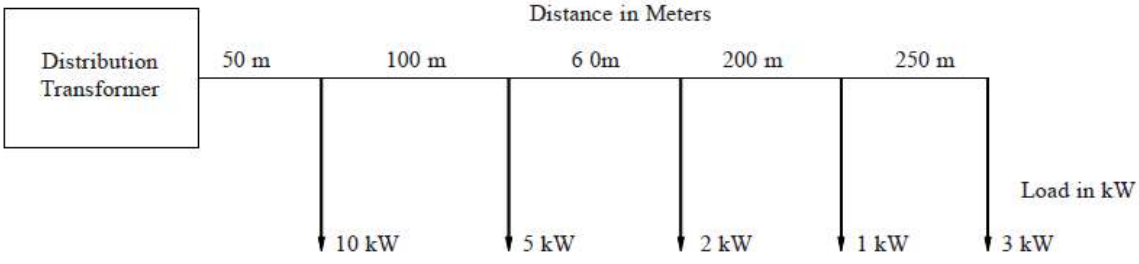


Fig : Load Particulars of a Distribution Line

(or)

(b) Determine the capacity of a transformer required in a village for the following load particulars.

1. 100 No's of domestic loads of 500W each.
2. 2 Industries with 5 H.P. motors each.
3. 50 Agricultural pump-sets with 2 H.P. motors each.
4. 1 Hospital with a load of 10 kW load. (CO4)

8. a) Describe the procedure of first aid for shock treatment to an electrocuted person (CO5)

(or)

b) State the reasons for fire accidents and state the prevention techniques (CO5)

MODEL PAPER – SUMMATIVE EXAMINATION

C-20-EE-404

BOARD DIPLOMA EXAMINATION, (C-20)

DEEE – FOURTH SEMESTER EXAMINATION

EE-401 : ELECTRICAL INSTALLATION AND ESTIMATION

Time: 3 hours Total marks: 80

PART-A **10 X 3 = 30**

Instructions:

i. **Answer all questions.**
ii. **Each question carries three marks.**
iii. **Answers should be brief and straight to the point and shall not exceed five simple sentences**

1. List the different types of main switches. (CO1)
2. Define service main and state different types of service mains. (CO1)
3. Draw the wiring layout for a workshop.(CO2)
4. Calculate the size of the cable for the given 3-phase, 7.5 HP, 400V induction motor.(CO2)

5. Estimate the quantity of schedule for number of poles, number of stays with 1 km, 11kV over head line as per IE rule. (CO3)
6. List any six materials used in plinth mounted sub-station (CO3)
7. State the need for load survey in a rural electrification (CO4)
8. List different tests to be conducted before energizing a new electrical installation (CO4)
9. State the reasons for fire accidents in electrical system. (CO5)
10. List different fire extinguishers in common use (CO5)

PART-B **5 X 8 = 40**

Instructions:

i. **Answer all five questions.**
ii. **Each question carries eight marks.**
iii. **The answers should be comprehensive and the criteria for valuation are the content but not the length of the answer.**

11. Explain surface conduit wiring with legible sketches. (CO1)

12. Estimate the quantity of materials required and their cost to make the concealed type conduit wiring for a building, the plan of which is shown in Fig. Assume any missing data. (CO2)

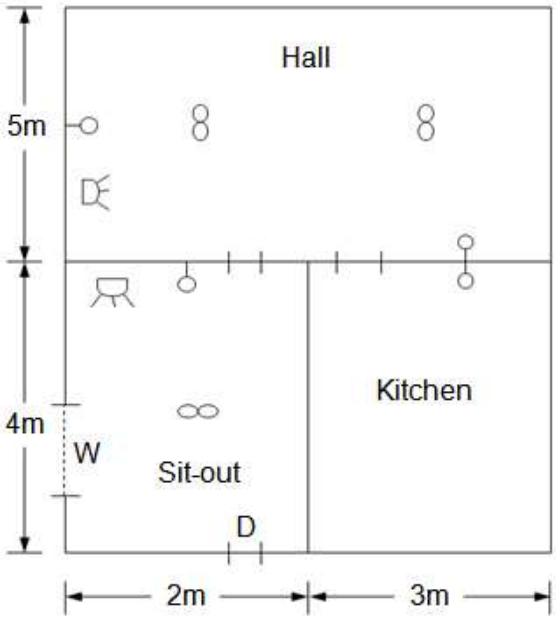


Fig. Plan of a building

(OR)

(b)The plan of a residential building is shown in Fig. It is to be provided with C.T.S. system of wiring. Estimate thematerials required and its cost. Wattage of Lamps = 60W, Fan = 80W, 5A socket = 100W, 15A

socket = 1000W. Assume any missing date. (CO2)

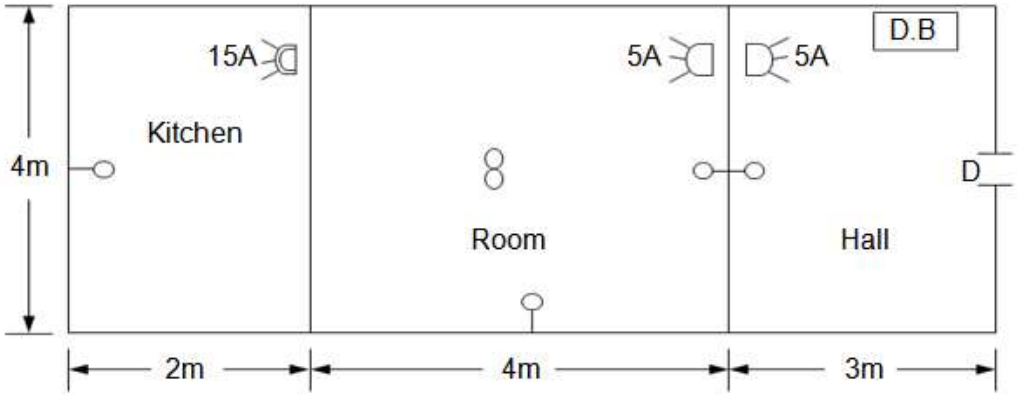


Fig. Plan of a residential building

13. A 400V, 3-Ø, 2 no's induction motors are to be installed in a workshop as shown in Fig. Prepare a schedule with quantity of material and its approximate cost. Draw a wiring layout. Assume missing data, if any. (CO2)

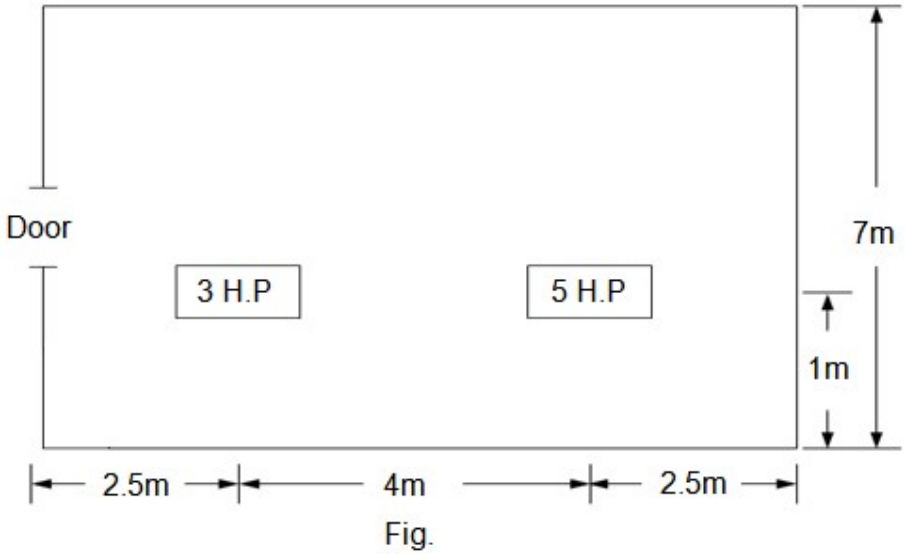


Fig.

(OR)

14.A submersible irrigation pump set of 10 H.P, 3-phase, 400V, 50Hz motor positioned at a depth of 38m in a tube well from the ground level. The distance between the nearest L.T pose and switch control room is 10m and distance between switch control room and tube well is 3m. Estimate the quantity of materials required and their cost. Also draw wiring diagram. (CO2)

15. Estimate the quantity of materials required for a 11KV overhead line for a length of 3.5 Km with an assumption of 60m span, with 7/2.59 sq.mm, ACSR conductor and 2 cut points in the line. (CO3)

16. Draw a neat sketch of 11kV/440V pole mounted substation and estimate the quantity of materials required for the erection. (CO3)

17. Describe the procedure to be followed for obtaining the new domestic electrical connection (CO4)

18. Describe the procedure of first aid for shock treatment to an electrocuted person (CO5)