

22627

12223

3 Hours / 70 Marks

Seat No.

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- Instructions –*
- (1) All Questions are *Compulsory*.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data, if necessary.
 - (5) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following:

10

- a) Draw the symbol for
 - i) Neutral link
 - ii) 5 Amp socket outlet 3 pin
- b) State the classification of electrical drawings.
- c) Write two differences between non-industrial and industrial load.
- d) List four factors determining selection of HT power cables.
- e) State the classification of outdoor installations.
- f) State the meaning and purpose of annual maintenance estimate.
- g) List four materials required for service connection.

P.T.O.

2. Attempt any THREE of the following:**12**

- a) Draw the wiring diagram and single line diagram for control of three lamps and one fan by individual switches.
- b) A domestic installation is having following load.
 - i) 4 light points of 60 W.
 - ii) 3 light points of 100 W.
 - iii) 4 Fan points of 60 W.
 - iv) 4 Sockets of 6 Amp having 60 W.
 - v) 2 Sockets of 16 Amp having 2 KW.

Find the number of lighting and power sub circuit.

- c) Compare residential installation and commercial installation on the basis of load capacity, type of supply, initial cost and type of load used.
- d) Draw and label wiring diagram for 3-phase induction motor connected to supply with star-delta starter.

3. Attempt any THREE of the following:**12**

- a) State the various types of contracts. Explain any one.
- b) Write any four rules for residential installation.
- c) State the design consideration in industrial installations.
- d) List any eight electrical equipment required in HT (11kv) substation.

4. Attempt any THREE of the following:

- State the design considerations (any eight) of electrical installation system for commercial buildings.
- Draw the wiring diagram for the residential load shown in Fig. No. 1

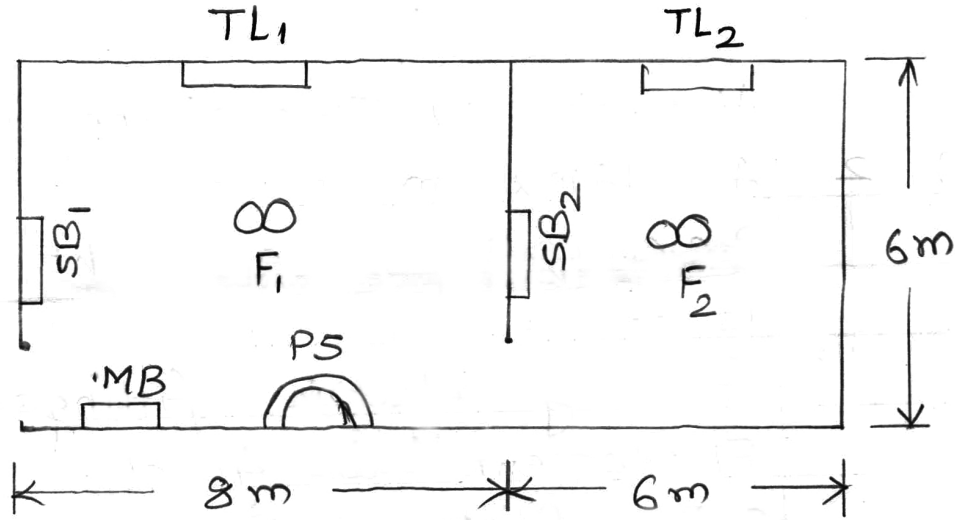


Fig. No. 1

MB - Main Board

PS - Power Socket

Assume one socket on each switch board.

- Distinguish between overhead and underground distribution line (any four points)
- Prepare a complete estimation and costing for HT (11kv) overhead line to be used for industry purpose.
- Explain street light pole structure with diagram.

5. Attempt any TWO of the following:**12**

- a) Design electrical installation scheme (Layout and wiring diagram) of industrial unit having three phase load of 50 KW floor mill. Also prepare the list of materials required.
- b) State the different methods of cable termination for HT (11KV) line. Explain any one method in details.
- c) i) State the type of tender.
ii) State the aim of public lighting installation.

6. Attempt any TWO of the following:**12**

- a) A 16m × 8m class room having R.C.C. ceiling at a height of 4m is to be provided with following electric fittings.

Fluorescent tube 40W	→ 9 Nos.
Ceiling Fans 50W	→ 4 Nos.
Plug points 100W	→ 2 Nos.

Draw single line diagram showing the position of switches and fittings. Prepare the list of material required for class room wiring.

- b) Explain Erection inspection and testing of industrial installation as per part 1 section 13 of NEC 2011.
- c) i) Enlist different on-off control equipment used in street light installation.
ii) State any six names of sources used in street light installation.
