22627

12223

3 Hours / 70 Marks Seat No. | | | | | | | | |

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.

Marks

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.

Marks

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

a) State the design considerations (any eight) of electrical installation system for commercial buildings.

b) Draw the wiring diagram for the residential load shown in Fig. No. 1

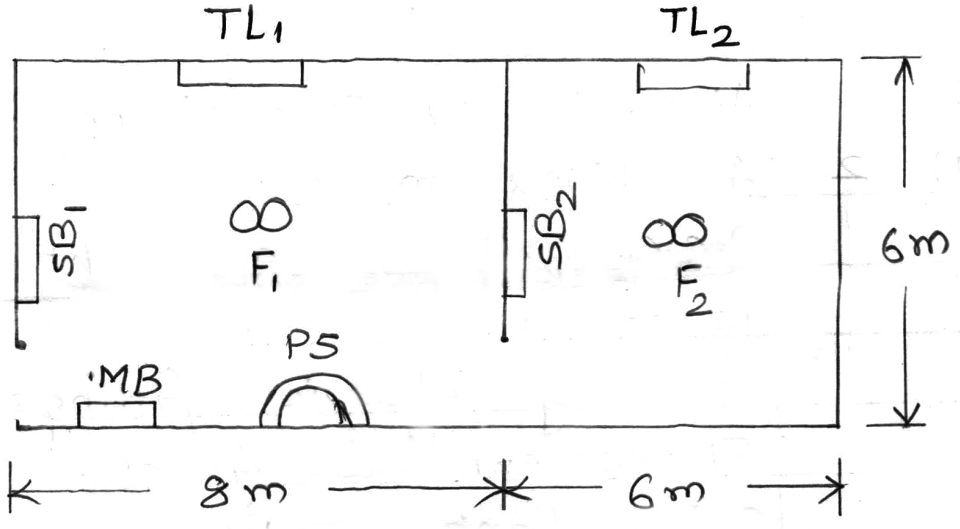

Fig. No. 1

MB - Main Board
PS - Power Socket

Assume one socket on each switch board.

c) Distinguish between overhead and underground distribution line (any four points)

d) Prepare a complete estimation and costing for HT (11kv) overhead line to be used for industry purpose.

e) Explain street light pole structure with diagram.

Marks

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.

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