

22627

22223

3 Hours / 70 Marks

Seat No.

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- Instructions* –
- (1) All Questions are *Compulsory*.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.
 - (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (7) 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) Define wiring and schematic diagram.
 - b) Sketch an electrical symbols for 5A and 15 A socket points.
 - c) List out various requirements of electrical installations for residential building.
 - d) Distinguish non industrial and industrial loads in industrial electrical installations.
 - e) State types cables used for distribution line installations.
 - f) General guidelines for selection of size of cables used in outdoor/street lighting installation.
 - g) State type of contracts used in contracting works.

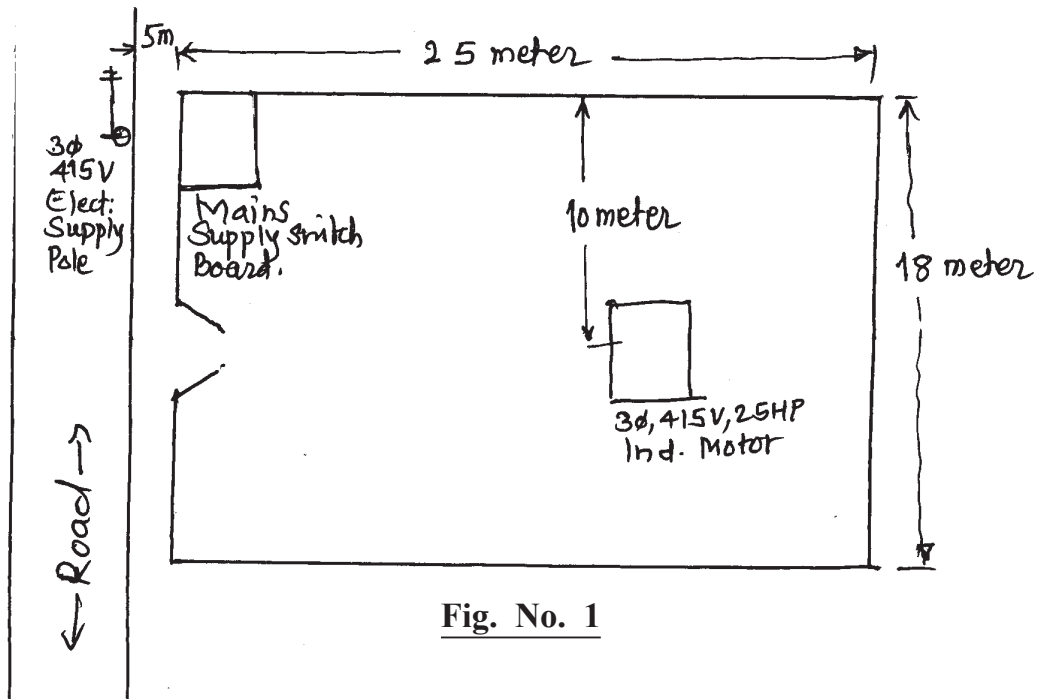
P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) Draw wiring diagram for wiring installation of 2 lamps and ceiling fan and 1 socket outlet on switch board with proper electrical symbols and labels in it and convert this wiring diagram into single line diagram.
 - b) Explain with suitable sketch types of service connections for residential building.
 - c) Enlist and calculate material quantity required for service connection of overhead type for a distance of 7.5 meter between supply service pole to meter board location.
 - d) Explain design considerations for industrial electrical installations particularly for main supply switch board (or Meter board).
- 3. Attempt any THREE of the following:** **12**
- a) Describe step by step the procedure of Estimation and Costing of residential installation with suitable example.
 - b) Explain design considerations and guidelines for the electrical installations in commercial buildings.
 - c) Draw neat sketch of 11 KV HT substation and enlist the material required in the substation.
 - d) Explain role of contractor in electrical installation works with qualities of good contractor.

4. Attempt any THREE of the following:

12

- For a residential building prepare list of electrical wiring installations material required alongwith electrical apparatus used in the residential building.
- In an industry having 25 HP induction motor, 3 phase as shown in Fig No. 1. Prepare electrical installation LT design scheme and list of quantity of material required.



- Explain with suitable example selection procedure of power cables in HT - distribution including their termination of cables in underground cabling.
- Draw single line diagram for LT substation.
- Describe design considerations for street light estimation, prepare their list of material required.

- 5. Attempt any TWO of the following:** **12**
- a) Explain criteria for selection of starter for motor. Draw wiring diagram for λ / Δ starter with motor and main switch.
 - b) Explain earthing provision using suitable neat sketch for HT/LT distribution lines installation.
 - c) Prepare estimation of material required for public street lighting installation typically any one of the following
 - i) Market
 - ii) Garden
 - iii) Temple
 - iv) Institute(Consider no. of lighting poles = 10 Nos.) (Total load 10 KW)
- 6. Attempt any TWO of the following:** **12**
- a) Prepare estimation of material required for Auditorium (Commercial complex) having lighting circuits of 40 Nos., Power circuits = 20 Nos. and three phase induction motors - 1 HP - 5 Nos., 3 HP - 2 Nos., 10 HP - 2 Nos.
 - b) Explain design considerations like lumens required type of luminaries, layout of roads standards for public-street light electrical installation.
 - c) Explain with suitable example quotation, format, tender, comparative statement format and order format in briefly.
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