

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

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|-----------|--|-----------|
| 1. | Attempt any <u>FIVE</u> of the following: | 10 |
| | <ol style="list-style-type: none">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).

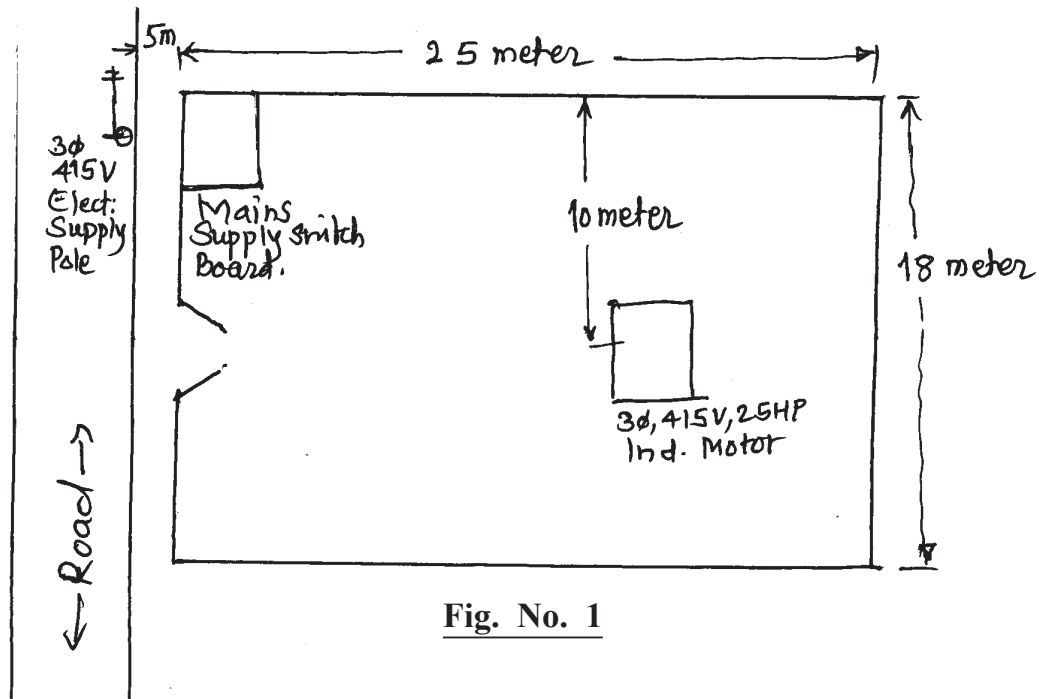
3. Attempt any THREE of the following: 12

- 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.
