

22627

23242

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 tender and state its types.
 - b) Write any two factors for selection of LT (415V) power cable.
 - c) State the different methods of representation of wiring diagram.
 - d) Write recommended Illumination level for
 - i) Parking Area
 - ii) Layout Road
 - e) Define service connection. State different types of service connections.
 - f) Draw the symbol for
 - i) ICTP
 - ii) Push button

P.T.O.

- g) State the functions of
 - i) motor switch
 - ii) main switch in motor wiring circuit

2. Attempt any THREE of the following: 12

- a) Explain how rating of main switch, DB and cable is decided in industrial installation.
- b) Describe with an example the procedure to calculate number of lighting subcircuit in residential installation.
- c) A Residential installation has the following load.
 - i) Four ceiling fan of 70 watt each
 - ii) Ten lamp of 20 watt each
 - iii) Four socket of 6 Amp having 100 watt
 - iv) Two power socket 16 Amp having 2kW eachCalculate:
 - (1) Total lighting load
 - (2) Total power load
 - (3) Size of distribution board
 - (4) Number of sub circuit
- d) Draw the wiring diagram and single line diagram for central of two fan, one lamp, one of 5A socket by individual switches.

3. Attempt any THREE of the following: 12

- a) List material required for over head service connection (any eight)
- b) Explain the steps in submission and opening of tender.
- c) Distinguish between tender and quotation. (any four points)
- d) State any eight electrical equipment require for 11 KV HT installation

- 4. Attempt any THREE of the following:** **12**
- a) Draw the single line diagram of LT(415V) substation
 - b) A 3 ϕ 3 wire connection is to be given to a premises in which an electric motor of 30 HP is to be installed. 40 meters of wire run from the main switch is required for this purpose. Determine size of the wire to be used if applied voltage is 400 V.
 - c) Enlist different on-off control equipment used in street light installation.
 - d) Compare overhead and underground distribution line. (any four point)
 - e) Explain with suitable example how machine current calculation are done in an industry.
- 5. Attempt any TWO of the following:** **12**
- a) Prepare a detail estimate to install 3 ϕ , 440 V, 50 Hz, 7 HP Induction motor for a crusher. The size of crushing room is 12 feet $\times$ 15 feet Assume the necessary and sufficient data. Draw installation plan and wiring diagram.
 - b) State the classification of street lighting installation on the basis of steel lamp height and light source.
 - c) Prepare the list of material and devices required for public lighting installation.
- 6. Attempt any TWO of the following:** **12**
- a) Define service connection, list the types of service connection. Explain any one with neat labelled diagram.
 - b) State the sequence to be followed for preparation of estimate for commercial electrical installation.
 - c) State and explain design consideration in industrial installation.
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