



C16/C16S-EE-404

5657

BOARD DIPLOMA EXAMINATION, (C-16/C-16S)

MARCH / APRIL - 2019

DEEE - IV SEMESTER EXAMINATION

ELECTRICAL INSTALLATION AND ESTIMATION

Time : 3 Hours]

[Total Marks : 80

PART - A

3×10=30

- Instructions :*
- (1) Answer **ALL** questions.
 - (2) Each question carries **THREE** marks.
 - (3) Answer should be brief and straight to the point

- 1 Classify the switches based on their function and place of use.
- 2 List different types of fuses.
- 3 State different types of service mains.
- 4 Calculate the size of the conductor required for 5 UP, 415V, 3- phase, 50 Hz Induction motor. $\eta = 85\%$, p.f = 0.8 lag).
- 5 State the resistance for (i) 10 MW power station (ii) Small substation (iii) 1 HT single phase, 230 V, 50 Hz motor.
- 6 Estimate the no of poles and insulators for the erection of 1 km, 11 kV over head line for a span of 70m.
- 7 Write short notes on capacity of a transformer.
- 8 State the reason for not using fuse in neutral wire.
- 9 State any three Industrial electrical accidents and remedies.
- 10 What is rural electrification scheme and state the main function of rural electrification Corporation.

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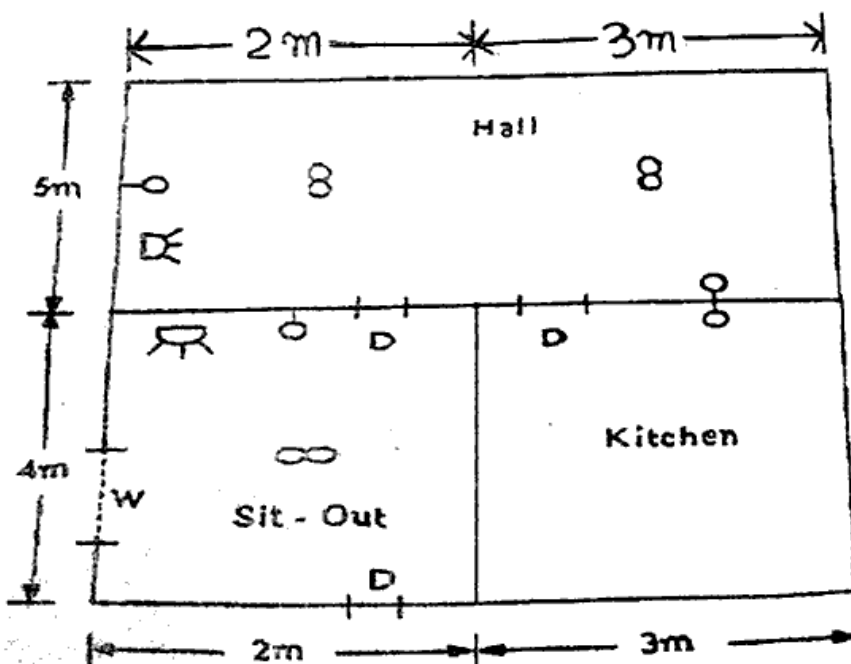
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PART - B

10×5=50

- Instructions :**
- (1) Answer any **FIVE** questions.
 - (2) Each question carries **TEN** marks.
 - (3) Answer should be comprehensive and criterion for valuation is the content but not the length of the answer.

- 11 (a) Explain with a neat sketch the construction and working of HRC fuse. 5
- (b) Explain the first aid to be followed in case of electric shock. 5
- 12 Draw the wiring lay out of a big hotel with four storied building and with lift arrangement. <http://www.sbtetonline.com>
- 13 Estimate the quantity of materials required and their approximate cost to make the surface type conduit wiring for a building the plan of which is shown in figure below. Assume any missing data.



- 14 A motor pump set of 3 H.P 415 V 3- phase. 50 HZ is to be installed for a well in a small farm. The distance of shed (3 m × 2 m) from nearest L.T. pole is 15m and from well is 10 m Due to lack of water, a bore well is provided in the well and the water is available at a depth of 25 m in the bore well. The motor-pump set is unable to lift the water from the bore-well. if it is installed in the pump-shed. Hence it is required to install the motor in a well at a depth of 12 m from ground level. Draw a neat sketch of wiring installation and estimate the quantity of materials.
- 15 Estimate the quantity of material required for the installation of a 400 W.A. 11-0.4 KV. 3 phase plinth mounted substation with neat sketch.
- 16 Estimate the materials required for pipe earthing with a neat sketch.
- 17 A new 2.5 km. 11 kV line is to be erected and connected to the existing 11 kV line. The height of the pole is 10 m. ACSR conductor of size 6/11 × 2.11 mm is to be used. Estimate the materials required. At least two cut points and 90° angle points may be assumed. Assume a span 80 m.
- 18 Describe the following test in detail.
- (a) Continuity of wiring in an electrical insulation. 5
- (b) Insulation resistance between conductors. 5

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