C09–EE–404

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BOARD DIPLOMA EXAMINATION, (C–09)
MARCH/APRIL—2018
DEEE—FOURTH 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) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Draw a neat sketch of service line and irrigation pump set.

2. Calculate the rating of ICTP main switch capable of handling the starting current for the given 3-phase, 400 V induction motor.

3. Draw the wiring diagram of fluorescent lamp.

4. Write the number of poles and cross-arms for 11 kV, 1 km distribution line with a span of 70 m.

5. State the different ratings of transformers used for plinth-mounted substation.

6. Write the methods of reducing earth resistance.

7. State IE Rule 31, related to placement of cutout on consumer's premises.

8. Explain load survey and state its uses in REC scheme.

9. What is the importance of plant maintenance?

10. What is meant by staggering of brushes?

PART—B

10×5=50

Instructions : (1) Answer *any* **five** questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Draw the wiring layout with 6 nos. power points for a mechanical workshop in a polytechnic.

12. Write the merits and demerits of open and concealed conduit wiring system in five aspects.

13. Draw the circuit incorporating main switch, energy meter, fuse cutout and distribution board.

14. Estimate the quantity of the material for a pole-mounted 11 kV/400 V substation.

15. A new 2·5 km, 11 kV line is to be expected and connected to the existing 11 kV line. The height of the pole is 10 m. ACSR conductor of size 6/1 × 2·11 mm is to be used. Estimate the materials required. At least two cut points and three 90° angle points may be assumed.

/3476

2

[*Contd...*

16. Calculate the regulation of a distribution line with $7/2 \cdot 59$ sq. mm ASCR conductor with the following load particulars as shown in the figure below :

Load particulars of a distribution line
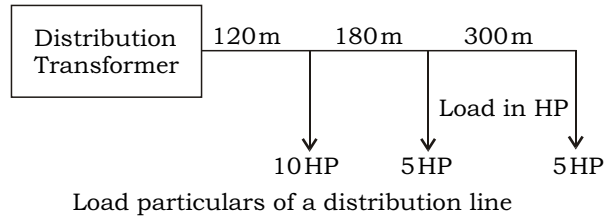
17. *(a)* Draw a nat sketch of pipe earthing and label the parts.

(b) Write the test procedure for continuity of wiring in a electrical installation with a neat sketch.

18. *(a)* Write the important steps involved in maintenance of power transformer.

(b) Explain the electrical accidents that occur in industries and suggest the remedies.

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