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BOARD DIPLOMA EXAMINATION, (C–09)
MARCH/APRIL—2014
DEEE—FOURTH SEMESTER EXAMINATION

ELECTRICAL ENGINEERING DRAWING

Time : 3 hours]   [*Total Marks* : 60

PART—A   5×4=20

Instructions : (1) Answer **all** questions.

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

(3) Drawing should be neat with necessary dimension.

1. Draw the sectional view of HRC fuse and label the parts.   4+1

2. Draw the sectional elevation of commutator assembly. (Not to scale).   5

3. Draw the sketch of 132 kV double-circuit tower. (Not to scale)   4+1

4. Draw the 11 kV/440 V plinth mounted transformer with two poles.   5

PART—B   20×2=40

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

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

(3) Drawing should be neat with necessary dimension.

5. *(a)* Draw the half-sectional end view of 100 kW DC generator with the following data :   10

1. External diameter of
    armature stampings   :   42 cm

2. Internal diameter of armature stampings : 20 cm

3. No. of slots : 39

4. Size of the slot : 4 cm × 1·2 cm

5. Height of the pole : 16 cm

6. Width of the pole : 12 cm

7. Inter-pole size : 4·5 cm × 15 cm

8. Air gap at main pole : 0·5 cm

9. Air gap at inter-pole : 0·7 cm

10. Thickness of yoke : 6·8 cm

Assume any missing data.

(b) Develop a single-layer lap winding for a three-phase AC machine having 24 slots, one conductor per slot and 4 poles. **10**

6. Draw the elevation and sectional plan of a transformer tank with the following dimensions : **20**

1. Diameter of the core : 35 cm

2. Width of the largest stampings : 28 cm

3. Width of the smallest stampings : 17·5 cm

4. Height of the core : 43 cm

5. Distance between the core centres : 49 cm

6. Length of the yoke : 77 cm

7. Total height of the transformer : 99 cm

8. Width of tank : 65 cm

9. Length of tank : 105 cm

10. Height of the tank : 150 cm

11. Total No. of tubes : 80

12. Diameter of each tube : 5 cm

13. Distance between the tube centres : 7·5 cm

14. No. of tubes lengthwise in one side in two layers : 25

15. No. of tubes widthwise in one side in two layers : 15

16. Height of the largest tube : 132·5 cm

17. Height of the smallest tube : 102 cm

Assume any missing data.

7. Draw the sectional front elevation and end view of a 7 HP, 400 V, 50 Hz, 3-phase, 1440 r.p.m., slip-ring induction motor with the following data : 20

 1. Outside diameter of the
   stator stamping : 288 mm

 2. Inside diameter of the stator stamping : 216 mm

 3. Stator core length : 106 mm

 4. Thickness of stator frame : 31 mm

 5. Slots :

  (i) Type : Open type

  (ii) Number : 36

  (iii) Size : 18 mm × 12 mm

 6. Air gap : 2 mm

 7. Outside diameter of the rotor stamping : 212 mm

 8. Inside diameter of the rotor stamping : 36 mm

 9. Rotor core length : 106 mm

 10. Slots :

  (i) Type : Open type

  (ii) Number : 36

  (iii) Size : 12 mm × 8 mm

 11. Shaft diameter :

  (i) At centre : 36 mm

  (ii) at bearing : 32 mm

 12. Ducts

  (i) Stator frame : 8

  (ii) Rotor : 4

  (iii) Spacing between ducts : Equally

Assume any missing data.

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