3479

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

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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

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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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