



C09-EE-408

**3479**

**BOARD DIPLOMA EXAMINATION, (C-09)**

**APRIL/MAY—2015**

**DEEE—FOURTH SEMESTER EXAMINATION**

**ELECTRICAL ENGINEERING DRAWING**

*Time* : 3 hours ]

[ *Total Marks* : 60

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**PART—A**

5×4=20

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

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

(3) Drawing should be neat with necessary dimensions.

1. Draw the HRC fuse and label its parts. 5
2. Draw the three-point starter and label the parts. 5
3. Draw 132 kV double-circuit steel tower. 5
4. Draw a neat sketch of substation earthing. 5

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**PART—B**

20×2=40

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

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

(3) Drawing should be neat with necessary dimensions.

5. (a) Develop a double-layer lap winding for a DC machine having 6 poles and 18 armature slots and single turn coil. 10

(b) Draw the half-sectional and side view of a commutator assembly with the following dimensions : 10

Diameter of the commutator : 3090 mm

Width of the riser : 240 mm

Height of the riser : 140 mm

Length of the V notch : 1380 mm

Length of the commutator : 1390 mm

Assume missing data if any. Choose the suitable scale.

6. Draw the front elevation and plan of a 3-phase 11 kV/400 volt. 100 kV A transformer. 20

Core :

1. Cross-section of the core : 3-stepped core

2. Diameter of the circle : 24 cm

3. Distance between the core centres : 42.5 cm

Yoke :

Height of Yoke : 25 cm

L.T. Winding :

1. Outside diameter of LT coil : 28.3 cm

2. Inside diameter of LT coil : 25 cm

3. Number of turns per limb : 12 cm

4. Height of LT winding : 43.5 cm

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[ Contd...

\* *H.T. Winding :*

1. Outside diameter of HT coil : 41.5 cm
2. Inside diameter of HT coil : 34.3 cm
3. Number of turns per limb : 572 cm
4. Height of HT winding : 43.5 cm

Overall height of yoke and core : 100 cm

Note : Assume any missing data.

7. Draw the half-sectional front elevation and end view of a 7.5-HP, 400-volt, 3-phase, 1440-r.p.m. slip-ring induction motor :

20

1. Outside diameter of stator stamping : 220
2. Inside diameter of stator stamping : 200
3. Stator core length : 105
4. Thickness of the stator core frame : 34

*Slots :*

1. Type : Open type
2. Number : 24
3. Size : 8×28

*Air gap :* : 2

1. Outside diameter of rotor stamping : 50
2. Inside diameter of rotor stamping : 35

*Shaft diameter :*

- (a) At centre : 20
- (b) At bearing : 16

*Rotor slots :*

1. Type : Open type
2. Number : 24
3. Size : 5×15

Note : Assume any missing data.

All the dimensions are in mm.

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