



C09-EE-408

3479

BOARD DIPLOMA EXAMINATION, (C-09)
MARCH/APRIL—2017
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 elevation and plan of a single pole knife switch.
 2. Draw the free hand sketch of pole and field coil assembly.
 3. Draw the sketch of steel tubular pole.
 4. Draw a neat schematic diagram of 33 kV/11 kV substation earthing system and label the parts.

PART—B

20×2=40

- Instructions** : (1) Answer *any two* questions.
(2) Each question carries **twenty** marks.
5. (a) Draw the assembled sectional side view of armature core, hub and shaft whose dimensions are as follows :
Diameter of the shaft = 163 mm
Diameter of the core = 528 mm

*
Diameter of the hub = 465 mm
No. of slots = 56
Radius of the bolt circle = 170 mm
Width of the hub below the bolt = 32 mm
Width of the hub above the bolt = 10 mm
Flange thickness = 10 mm
Length of core gap equally spaced =
250 mm with 14 mm spacer
Distance between the two hubs = 376 mm

Assume the missing data if any.

(b) Develop 3-phase lap winding for an AC machine having 24 slots, 2 conductors per slot and 4 poles.

6. Draw the full sectional elevation and sectional plan of a 10 kVA, 3300/440 V, three-phase core type power transformer with the following dimensions :

Core type = 3 stepped
Diameter of the circumcircle = 80
Center to center distance between cores = 180
Yoke height = 80
Total height of the transformer = 520
Inside diameter of LT coil = 90
* Outside diameter of LT coil = 110
Height of LT winding = 240
Number of turns per limb = 60
Inside diameter of HT coil = 145
Outside diameter of HT coil = 175
Height of HT winding = 240
Number of turns per limb = 250

All dimensions are in mm. Assume any missing data.

7. Draw the following views of a 7.5 hp, 440 V, 50 Hz, 3- , 1440 r.p.m. slip ring induction motor :

(a) Half-sectional front elevation

(b) Half-sectional end view

The Dimensions are as follows :

Outside diameter of stator stampings = 220

Inside diameter of stator stampings = 200

Stator core length = 105

Thickness of stator frame = 34

Stator slots

Type = Open type

Number = 24

Size = 8 28

Air gap = 2

Outside diameter of rotor stampings = 50

Inside diameter of rotor stampings = 35

Rotor slots

Type = Open type

Number = 24

Size = 5 15

Shaft diameter

At center = 20

At bearing = 16

Ducts

Outside diameter of duct = 176

Inside diameter of duct = 120

Spacing between ducts = 60

All dimensions are in mm. Assume any missing data.
