



C09-EE-408

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BOARD DIPLOMA EXAMINATION, (C-09)

OCT/NOV—2017

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 sectional elevation and side view of the unprotected flange coupling.

2. Draw the free-hand sketch of commutator and label the parts.

3. Draw the sketch of 400 kV double-circuit tower.

4. Draw the single-line diagram of 11 kV/400 V plinth mounted substation.

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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) Draw the assembled sectional side view of armature core, hub and shaft whose dimensions are as follows : 10

Diameter of the shaft	: 60 mm
Diameter of the core	: 440 mm
Diameter of the hub	: 380 mm
Radius from the centre of the axle to the bolt circle	: 125 mm
Dimension of the bolt head	: 40 mm×17 mm
Dimension of ventilating duct	: 100 mm
Distance of the duct from the axle centre	: 60 mm
Flange thickness	: 7.5 mm
Length of core gap equally spaced	: 155 mm 5 mm
Distance between the two hubs	: 275 mm

Assume the missing data, if any. 10

(b) Develop a simple wave winding for a 42-conductor 4-pole d.c. machine with ring diagram and winding table. 10

6. Draw the sectional elevation and sectional plan of a 250/600 V, single-phase core type transformer with the following dimensions :

Core type	: 3 stepped
Diameter of the circum circle	: 68
Distance between core centres	: 185
Yoke height	: 60
Inside diameter of HT winding	: 125
Outside diameter of HT winding	: 180
Height of HT winding	: 380
Inside diameter of LT winding 1st layer	: 75
Outside diameter of LT winding 1st layer	: 95
Thickness of each layer	: 10

All dimensions are in mm. Assume the missing data, if any. 20

7. Draw the following views of a 3- , 440-V, 50-Hz slip ring induction motor :

(a) Half-sectional front elevation

(b) Half-sectional end view

The dimensions are as follows :

Outside diameter of stator stampings : 230

Inside diameter of stator stampings : 164

Stator core length : 120

Thickness of stator frame : 25

*Stator slots :*

Type : open type

Number : 36

Size : 15 8

Air gap : 2

Outside diameter of rotor stampings : 160

Inside diameter of rotor stampings : 35

*Rotor slots :*

Type : open type

*Shaft diameter :*

At centre : 35

At bearing : 30

Total distance of footrest : 220

All dimensions are in mm. Assume the missing data, if any. 20

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