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BOARD DIPLOMA EXAMINATION, (C–14)
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.

1. Draw the sectional end view of protected flange coupling for a shaft of diameter 30 mm.   5

2. Draw the wiring diagram of Rotor resistance starter.   5

3. Draw the sectional end view of single core cable and label the parts.   5

4. Draw the sketch of 220 kV double circuit steel tower.   5

PART—B   20×2=40

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

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

5. *(a)* Draw the sectional elevation of commutator with the following dimensions.   10

Commutator diameter	:	308 mm
Commutator length	:	152 mm
Riser dimensions	:	14 mm height × 24 mm width
Number of armature coils	:	72
Mica insulation outer diameter	:	264 mm
Mica insolation length	:	200 mm

Mica insulation V-notch length : 64 mm

End ring outer diameter : 204 mm

End ring thickness : 6 mm

End ring length : 24 mm

Air-ducts in commutator : 4-air ducts of thickness 12 mm

Air-duct outer diameter : 148 mm

Bolts used to stack commutator : 4-Hexagonal bolts of diameter 12 mm

Bolt circle diameter : 142 mm

Shaft diameter : 80 mm

Assume any missing data in proportionate with the above dimensions.

(b) Draw the winding diagram of 24 slot 4-pole single layer lap wound single phase AC machine.　　10

6. (a) Draw the sectional end view and elevation of single-phase, single-stepped, core-type transformer with the following dimensions :　　10

Core circle diameter : 65 mm

Spacing between core centers : 185 mm

LT winding inner diameter : 70 mm

LT winding outer diameter : 120 mm

HT winding inner diameter : 125 mm

HT winding outer diameter : 170 mm

Height of core : 360 mm

Height of Yoke : 60 mm

Height of Bakelite ring : 20 mm

Assume any missing data in proportionate with above dimensions.

(b) Draw the sectional end view and elevation of rotor of three-phase squirrel cage induction motor with the following dimensions : 10

Shaft diameter	: 40 mm
Outer diameter of rotor	: 180 mm
Number of rotor slots	: 31
Type of rotor slot	: semi-closed circle
Size of rotor slot	: 10 mm
Slot opening	: 2 mm
Number of air-ducts in rotor	: 4
Length of rotor	: 140 mm
Size of radial cooling duct in rotor	: 10 mm
Number of radial cooling ducts	: 1

Assume any missing data in proportionate with the above dimensions.

7. (a) Draw the sketch of high head hydroelectric power plant and label the parts. 10

(b) Draw the sketch of pipe earthing and label the parts. 10

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