



C14-EE-407

4467

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 insulation length	:	200 mm

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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.

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- (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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