



C16-EE-406

6445

BOARD DIPLOMA EXAMINATION, (C-16)  
OCTOBER—2020  
DEE—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) All dimensions are in mm.

1. Draw the side view of flange coupling. 5
2. Draw a neat sketch of three point starter for DC shunt motor and label the parts. 4+1
3. Draw neatly the sectional view of three core belted cable and label the parts. 4+1
4. Draw a neat sketch of bow stay arrangement for LT pole with strain insulator. 5

**PART—B**

20×2=40

- Instructions :** (1) Answer **any two** questions.  
(2) Each question carries **twenty** marks.  
(3) Answers should be comprehensive and the criteria for valuation are the content but not the length of the answer.

5. (a) Develop a simple wave winding for a 4 pole, 34 armature slot DC machine and one conductor per slot. Take  $Y_b = Y_f$ , single layer. 10

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(b) Draw a neat sketch of plate earthing with standard dimensions. 8+2

6. A 10 kVA 3-phase 3300/400 V transformer with 3 stepped core has following dimensions. Draw the sectional elevation and plan as per the following data : 10+10

Circumcircle dia	80 mm
Distance between core centres	190 mm

**L.T. windings**

Outer dia	110 mm
Inner dia	90 mm

**H.T. winding**

Outer dia	175 mm
Inner dia	145 mm
No. of turns per limb	250 mm
Yoke height	80 mm
L.T. winding height	240 mm
H.T. winding height	240 mm
Total transformer height	420 mm

Assume all other missing data and draw to a suitable scale.

7. (a) Draw the half sectional end view of a 7 hp, 400 V, 50 Hz, 3-phase, 1440 r.p.m. slip ring induction motor. 12

The main dimensions are given below :

Outside diameter of the stator stamping	288 mm
Inside diameter of the stator stamping	216 mm
Thickness of the stator frame	31 mm
Stator slots—	
Type	Open
Number	36
Size	18 × 12 mm
Air gap	2 mm
Outside diameter of the rotor stampings	212 mm
Inside diameter of the rotor stamping	36 mm

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Rotor slots	
Type	Open
Number	36
Size	12 × 8 mm
Shaft diameter	
at centre	36 mm
at bearing	32 mm
Ducts	
stator frame	8
rotor	4
spacing between ducts	equally spaced

Assume all other missing data and draw to a suitable scale.

- (b) Draw a neat sketch of rotor resistance starter of a 3-phase induction motor and label the parts.

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