



C20-EE-407

7449

**BOARD DIPLOMA EXAMINATION, (C-20)**  
**OCTOBER/NOVEMBER—2023**  
**DEEE – FOURTH SEMESTER EXAMINATION**  
**ELECTRICAL ENGINEERING DRAWING—II**

Time : 3 Hours ]

[ Total Marks : 60

**PART—A**

5×4=20

- Instructions :** (1) Answer **all** questions.  
(2) Each question carries **five** marks.  
(3) The drawings should be legible.

1. Draw the bulk oil circuit breaker and label its parts.
2. Draw the cross-sectional view of the three core belted cable and label its parts.
3. Draw the single line diagram of the thermal power plant and label its parts.
4. Draw the wiring diagram of the D.O.L. starter and label its parts.

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- Instructions :** (1) Answer **all** questions.  
 (2) Each question carries **twenty** marks.  
 (3) The drawings should be legible.

5. (a) Draw the sketch of the 11 kV/400 V pole mounted substation and label its parts.

(OR)

- (b) Draw the sectional plan and elevation of the single-phase transformer having the three stepped core with the following data :

Distance between the core centers	=	20 cm
Diameter of the core circle	=	6 cm
Inner diameter of the LT winding	=	7 cm
Outer diameter of the LT winding	=	12 cm
Inner diameter of the HT winding	=	13 cm
Outer diameter of the HT winding	=	18 cm
Total height of the core and yoke	=	36 cm
Height of each of the top and bottom parts of the yoke	=	6 cm
Thickness of each of the top and bottom Bakelite Rings	=	2 cm
Height of the LT winding	=	20 cm
Height of the HT winding	=	20 cm

Assume any other data that requires to complete this drawing legibly.

6. (a) Draw winding diagram using the winding table of the single-phase AC machine having full pitched lap winding with 4 poles, 24 slots and one conductor per slot.

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**(OR)**

(b) Draw the half sectional end view and elevation of three-phase 400 V 50 HZ, 5 HP slip ring induction motor with the following data :

Diameter of the shaft at bearing = 32 mm

Diameter of the shaft at center = 36 mm

Inside diameter of the rotor core stamping = 36 mm

Outside diameter of the rotor core stamping = 212 mm

Inside diameter of the stator core stamping = 216 mm

Outside diameter of the stator core stamping = 288 mm

Inside diameter of the stator frame = 288 mm

Outside diameter of the stator frame = 352 mm

Number of 16 mm × 12 mm open type stator slots = 36

Number of 12 mm × 8 mm open type rotor slots = 32

Number of equally spaced ducts in the stator = 8

Number of equally spaced ducts in the rotor = 4

Length of the rotor core stamping = 108 mm

Length of the stator core stamping = 108 mm

Length of the stator frame = 144 mm

Width of each of the end covers = 56 mm

Length of the shaft = 400 mm

Spacing between the 60 mm × 24 mm foot rests = 164 mm

Length of each of the 60 mm × 24 mm foot rests = 228 mm

Assume any other missing data that requires to complete this drawing legibly.

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