



C20-EE-307

7251

BOARD DIPLOMA EXAMINATION, (C-20)

FEBRUARY/MARCH — 2022

DEEE - THIRD SEMESTER EXAMINATION

ELECTRICAL ENGINEERING DRAWING - I

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 sketch of dynamo meter type wattmeter and label the parts.
2. Draw the sketch of guarding system for HV line over LV line crossing.
3. Draw the sketch of three point starter for a DC shunt motor and label the parts.
4. Draw a sketch of 110 kV steel tower for double circuit with standard dimensions.

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**PART—B**

20×2=40

- Instructions :** (1) Answer **all** questions.  
(2) Each question carries **twenty** marks.

- 5.** (a) Draw the half-sectional end view and elevation of a 50 kW DC generator with the main dimensions as given below :

External diameter of armature stamping	:	380 mm
Internal diameter of armature stamping	:	200 mm
No. of slots	:	32
Size of slot	:	35 × 15 mm
Total height of main pole including pole shoe	:	140 mm
No. of main poles	:	4
Main pole size	:	70 × 30 mm
Length of main pole	:	190 mm
No. of inter poles	:	4
Inter pole size	:	100 × 40 mm
Air gap	:	4 mm
Length of the armature core	:	240 mm
Thickness of yoke	:	50 mm
Diameter of commuter up to contact surface	:	220 mm
Diameter of commuter up to riser	:	240 mm
Shaft diameter at coupling end	:	60 mm
Total length of the shaft	:	600 mm

All dimensions are in mm. Assume any missing data.

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**(OR)**

- (b) Draw the half-sectional elevation and side view of a commutator assembly with following :

Diameter of commutator	: 140 mm
Diameter of shaft	: 42 mm
Length of commutator	: 124 mm
Width of the commutator	: 8 mm
Depth of commutator segment	: 32 mm
Height of riser	: 8 mm
Commutator segments	: 76

Assume any missing data.

6. (a) (i) Develop a simple lap winding for a 24 armature slots, 4-pole DC machine with winding table showing the brush position and ring diagram.
- (ii) Draw the earthing system layout for 33 kV/11 kV yard and label the parts.

**(OR)**

- (i) Develop a single layer wave winding for a 34 armature slots, 4-pole DC machine with winding table ring diagram showing the brush position and.
- (ii) Draw the sketch of plate earthing with pit dimensions and label the parts.

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