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C20-EE-307

7251

BOARD DIPLOMA EXAMINATION, (C-20)

JUNE/JULY—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 moving iron type instrument and label the parts.
2. Draw the cross-sectional view of HRC fuse cartridge and label the parts.
3. Draw the sketch of three-point starter for a DC shunt motor and label the parts.
4. Draw the sketch of bow stay arrangement for LT line.

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PART—B

20×2=40

Instructions : (1) Answer the following questions.

(2) Each question carries twenty marks.

5. (a) Draw the half sectional end elevation looking from the shaft end of a 90 kW DC generator with the main dimensions as given below :
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External diameter of armature stamping	:	400 mm
Internal diameter of armature stamping	:	220 mm
No. of slots	:	32
Size of slot	:	35 × 15 mm
Total height of main pole including pole shoe	:	150 mm
No. of main poles	:	4
Main pole size	:	70 × 30 mm
Length of main pole	:	200 mm
No. of inter poles	:	4
Inter pole size	:	110 × 50 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 the following dimensions : 20

Diameter of commutator : 309 mm

Width of riser : 24 mm

Height of riser : 14 mm

Length of V notch : 138 mm

Length of commutator : 139 mm

Assume any missing data. All dimensions are in mm.

6. (a) (i) Develop a simple lap winding for 36-armature slots, 6-pole DC machine with winding table. Showing the brush position and ring diagram. 10
- (ii) Draw the earthing layout plan for 132/33 kV substation and label the parts. 10

(OR)

- (b) (i) Develop a single layer wave winding for 34-armature slots, 4-pole DC machine with winding table ring diagram showing the brush position. 10
- (ii) Draw the sketch of plate earthing with pit dimensions and label the parts. 10

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