

7251

BOARD DIPLOMA EXAMINATION, (C-20)
NOVEMBER/DECEMBER—2022
DEEE – THIRD SEMESTER EXAMINATION
ELECTRICAL ENGINEERING DRAWING—I

Time : 3 hours]

[Total Marks : 60

PART—A

5×4=20

- Instruction :** (1) Answer **all** questions.
(2) Each question carries **five** marks.

1. Draw the Electrical symbols for the following :

- (a) Variable Inductance
- (b) Battery
- (c) Buzzer
- (d) One-way switch
- (e) DC generator

* 2. Draw the sketch of induction type single phase energy meter.

3. Draw the sketch of four-point starter for a DC compound motor and label the parts.

4. Draw a sketch of 132 kV steel tower for single circuit with standard dimensions.

PART—B

20×2=40

Instructions : (1) Answer the following questions.

(2) Each question carries **twenty** marks.

5. (a) Draw the half sectional elevation and end view of the armature core :—

Hub and shaft whose dimensions are as follows : 20

Diameter of the shaft	:	130 mm
Diameter of the core	:	900 mm
Diameter of the hub	:	770 mm
Radius from the centre of the axle to the bolt circle	:	210 mm
Diameter of bolt head	:	20 mm
Dimension of ventilating duct	:	200 mm towards bolt and 240 mm towards axle
Distance of duct from the axle centre	:	105 mm
Flange thickness	:	20 mm
Depth of flange	:	90 mm
Length of core gap equally spaced	:	230 mm with 10 mm gap
Total distance between the two hubs	:	500 mm

Assume any missing data and all dimensions are in mm.

(OR)

(b) Draw the half sectional elevation and side view of a commutator assembly with following dimensions : 20

Diameter of the shaft	:	40 mm
Diameter of commutator	:	135 mm
Length of commutator	:	120 mm
Width of riser	:	7 mm
Depth of commutator segment	:	30 mm
Height of riser	:	7 mm
No. of segments	:	76

Assume the missing data and all dimensions are in mm.

6. (a) (i) Develop a single layer lap winding diagram for a 32 armature slots, 4-pole DC machine with winding table showing the brush position and ring diagram. 10

(ii) Draw the earthing layout plan for 33/11 kV substation and label the parts. 10

(OR)

(b) (i) Develop a single layer wave winding diagram for a 24 armature slots, 4-pole DC machine with winding table showing the brush position and ring diagram. 10

(ii) Draw the sketch of pipe earthing with pit standard dimensions and label the parts. 10

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