

TED (15/19) - 4037
(REVISION-2015/19)

N23-0002316

Reg.No.....
Signature.....

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER - 2023**

ELECTRICAL ENGINEERING DRAWING

(Maximum Marks:100)

(Time: 3 Hours)

PART - A
(Maximum Mark : 10)

Marks

I. Answer **all the** questions in one or two sentences. Each question carries 2 marks.

1. Draw the symbols of (a) Lightning Arrestor (b) Synchronous Generator.
2. Define the function of brush in generators.
3. Name the main two types of slots used in stator & rotor.
4. Name the parts core of transformer.
5. Explain helical winding.

(5 x 2 = 10)

PART - B
(Maximum Mark: 30)

II Answer **any five** questions from the following. Each question carries 6 marks.

1. Draw the layout of a 66KV/11KV substation with one incoming and two outgoings.
2. Draw the neat sketch of plate earthing.
3. Draw the composite type brush holder.
4. Draw the sectional view of commutator.
5. Draw the elevation and end view of end cover of induction motor.
6. Sectional view of one limb 11KV/415V, 25KVA oil immersed three phase transformer.
7. Draw the sectional front elevation of single phase 230/110v, 5KVA one step core type transformer.

(5 x 6 = 30)

P.T.O

PART – C

(Maximum Mark: 60)

(All dimensions are in millimeter. Missing data may be assumed.)

- III. Draw the layout of 400KV substation with two incoming feeders and three 220KV feeders, one 66KV feeder and one 110KV feeder with all equipments. (30)

OR

- IV. Draw the half sectional front elevation and half sectional end view of 25 kva 400v 1500rpm 3 phase alternator. The rotor is of salient pole type.

Main dimensions are:

- (i) Outside diameter of the stator stamping = 400
- (ii) Inside diameter of the stator stamping = 290
- (iii) Thickness of stator frame = 36
- (iv) Stator core length = 135
- (v) 48 nos. of 32 x 12 size open type slots
- (vi) Air gap 2
- (vii) Pole
 - a) Pole axial length = 135, pole width = 70, pole height with shoe = 75 , shoe height = 18
- (viii) Shaft diameter : at centre = 70 and at bearing = 55. (30)

- V. Draw the half sectional front elevation and half sectional end view of 7.5hp 400V, 50Hz, 3 phase, 1440 rpm slip ring induction motor. Main dimensions are:

- i) Outside diameter of the stator stamping = 288
- ii) Inside diameter of the stator stamping = 216
- iii) Stator core length = 106
- iv) Thickness of stator frame = 31
- v) 36 Nos. of 18 x 12 size open type slots
- vi) Air gap 2
- vii) Outside diameter of the rotor stamping = 212
- viii) Inside diameter of the rotor stamping = 36
- ix) Rotor core length = 106
- x) 36 nos. of 12 x 8 size open type slots
- xi) Shaft diameter at centre = 36 and at bearing = 32
- xii) Equally spaced 8 ducts in stator frame and 4 slots in rotor.

(30)

OR

VI. Draw the sectional elevation and plan of a three phase transformer with the following data.

Three stepped core.

Diameter of the circum circle = 415

Distance between core centres = 425

Size of the first core = 216

Size of second core = 168

Size of third core = 100

Height of yoke = 250

Overall height of yoke and core = 1000

Length of core = 1080

Outer diameter of LT winding = 283

Inner diameter of LT winding = 250

Height of LT winding = 435

Number of turns per phase = 12

Outer diameter of HT winding = 415

Outer diameter of HT winding = 343

Height of HT winding = 435

Number of turns per phase = 572

(30)

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