TED (15) – 4037

(REVISION — 2015)

Reg. No. .....

Signature .....

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2018

ELECTRICAL ENGINEERING DRAWING

[*Time* : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

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

1. Draw the symbols of
   (a) Lightning arrestor (b) Three winding transformer.
2. What is the role of earthing switch in substation ?
3. What are the different types of windings used in DC generator ?
4. What are different types of induction motor ?
5. What are the different types of transformers ? (5 × 2 = 10)

PART — B

(Maximum marks : 30)

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

1. Draw the neat sketch of pipe earthing.
2. Draw the single line diagram of 11kv substation.
3. Draw the neat sketch of 3 phase 4 pole salient pole rotor of an alternator.
4. Draw the side view of a pole of a DC machine fastened to the yoke.
5. Draw the neat sketch of slip ring rotor of a 3 phase induction motor.
6. Draw the three step core section of the transformer with diameter of the circle d = 250mm.
7. Draw the neat sketch of helical winding of transformer. (5 × 6 = 30)

Marks

PART — C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 30 marks.)

Unit — I

III Draw the layout of a 220kv substation with all protective devices including auxiliary supply to the substation equipments. Incoming feeders-2 Nos., Outgoing feeders — one 220 kv feeder, one 66 kv feeder, one 11 kv feeder. 30

Or

IV Draw the half sectional elevation and side view of a DC machine commutator assembly with following dimensions.

Diameter of shaft	:	30 mm
Diameter of commutator	:	145 mm
Length of commutator	:	140 mm
Width of the riser	:	10 mm
Height of the riser	:	10 mm
Depth of commutator segment	:	25 mm
No. of segments	:	80

Assume any missing dimensions. 30

Unit — II

V Draw the sectional elevation and plan of a induction motor with following dimensions.

Outer diameter of stator stamp	:	240 mm
Inner diameter of stator stamp	:	174 mm
Length of stator core	:	140 mm
Thickness of stator frame	:	30 mm
Type of slot	:	open
No. of stator slots	:	40
Size of stator slots	:	16 × 8mm
Width of the air gap	:	3mm
Outer diameter of rotor stampings	:	168 mm
Inner diameter of rotor stampings	:	40 mm
Shaft diameter at center	:	40 mm
Shaft Diameter of Bearings	:	35 mm

Assume any missing dimensions. 30

Or

Marks

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

Cross section of core	:	Single stepped core
Diameter of the core	:	240 mm
Distance between the core centers	:	400 mm
Internal diameter of LT winding	:	30 mm
Height of the LT winding	:	300 mm
Internal diameter of HT coil	:	298 mm
External diameter of HT coil	:	330 mm
Height of the HT winding	:	300 mm
Overall height of yoke and core	:	400 mm

Assume any missing data. 30