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)

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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 $\times$ 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

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

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