

TED (15) – 4037

(REVISION — 2015)

Reg. No. EDRG-3

Signature

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2017

ELECTRICAL 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) Star delta starter
2. Sketch Tripolar Armature stampings.
3. Sketch closed type and semi closed type slots.
4. What are the two types of Rotors used in Synchronous machine ?
5. Draw the symbol of two winding and auto transformer. (5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Draw a neat sketch of Pipe Earthing.
2. Draw single line diagram of 11 KV substation.
3. Draw a neat sketch of salient pole rotor of Alternator with suitable dimensions.
4. Draw a neat sketch of squirrel cage rotor of a 3 phase Induction motor.
5. Draw a neat sketch of shelltype transformer.
6. Draw 3 step core section of a transformer. (d=330 mm)
7. Draw the isometric view of stator and frame of squirrel cage induction motor.

(5×6 = 30)

PART — C

(Maximum marks : 60)

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

III Draw layout of 400 KV substation.

30

OR

IV Draw the half sectional end view of 3 phase cylindrical pole alternator. The field system of the alternator is stationary while the armature which is connected in star is rotating one.

Out side diameter of stampings of the field system	:	280
Inside diameter of the stampings of the field system	:	200
Thickness of the frame	:	30
Slots		
Type	:	open
Number	:	24
Size	:	28 × 10
Air gap	:	2
Outer diameter of the armature stampings	:	196
Inner diameter of the armature stampings	:	40
Slots		
Type	:	open
Number	:	36
Size	:	25 × 8
Shaft diameter		
At centre	:	40
At bearing	:	35

30

V Draw the half sectional end-view of a three phase slip ring induction motor with the following dimensions.

Outside diameter of the stator stampings	=	288
Inside diameter of stator	=	216
Thickness of stator frame	=	31
Air gap width	=	2
Stator slots	=	Open type 36 Nos. size (18 × 12)
Rotor slots	=	Open type, 36 Nos. size (12 × 8)
Out side diameter of the rotor stampings	=	212
Inside diameter of the rotor stampings	=	36
Shaft diameter		
(a) At center	=	36
(b) At bearings	=	32

Assume any other missing dimensions

30

OR

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

Cross section of the core	=	one steppe core
Diameter of the circle	=	75
Distance between core centers	=	150
Total height of yoke	=	80
Outer diameter of LT coil	=	90
Inner diameter of LT coil	=	75
Height of LT winding	=	230
Number of turns/limbs	=	50
Outer diameter of HT coil	=	121
Inside diameter of HT coil	=	110
Height of HT winding.	=	230
Number of turns/limbs	=	200
Total height of transformer	=	400

30