FOURTH SEMESTER DIPLOMA EXAMINATION IN ELECTRICAL AND ELECTRONICS ENGINEERING — APRIL, 2017

ELECTRICAL DRAWING

[*Time* : 3 hours

(Maximum marks : 100)

[*Note* :— 1. All dimensions are in millimeter.

2. Missing data may be assumed.]

PART — A

(Maximum marks : 10)

Marks

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

1. Draw the symbols of

    (i) Circuit Breaker   (ii) Star - Delta transformer

2. Sketch the Armature Lamination.

3. Sketch open type and semi closed type slots.

4. What are the two types of Rotors used in Induction Motor ?

5. What are the two basic types of transformer construction ?   (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 Plate Earthing.

2. Draw single line diagram of 66 KV substation.

3. Draw a neat sketch of a cylindrical type rotor of Alternator.

4. Draw a neat sketch of slip ring rotor of a 3 phase Induction motor.

5. Draw a neat sketch of core type transformer.

6. Draw 2 step core section of a transformer. (d=330mm)

7. Draw sectional elevation of commutator of DC machine with suitable dimensions.

(5×6=30)

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PART — C

(Maximum marks : 60)

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

UNIT — I

III Draw layout of 110KV Substation with all protective devices. Incoming Feeders 2 nos. Outgoing feeders - One 11KV, One 66 KV and One 110KV.   30

OR

IV Draw the half sectional end view of DC generator with following details. Missing data may be assumed.

Diameter of shaft	:	40
No. of spider legs	:	6
Diameter of spider wheel	:	210
Diameter of armature	:	415
Aramture slots	:	36 (35×12)
Thickness of yoke	:	40
No. of poles	:	4
No. of inter poles	:	4
Height of main pole	:	160
Width of main pole	:	120
Height of inter pole	:	150
Width of inter pole	:	44

Shaft supported by endplate (KN)   30

UNIT — II

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

Inside diameter of stator	=	550
Rotor diameter	=	546
Height of base upto eyebolt	=	930.4
Total width at footrest	=	927.6
Foot thickness	=	50
Width of footrest	=	140
Air gap width	=	2
Stator slots	=	Open type, 36 Nos.
	=	size (18 × 12)
Rotor slots	=	Open type, 36 Nos.
	=	size (12 × 8)

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OR

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

Cross section of the core	=	3 stepped core
Diameter of the circle	=	650
Distance between core centers	=	185
Total height of yoke	=	60
Outer diameter of 1st layer	=	925
Inner diameter of 1st layer	=	70
Outer diameter of 2nd layer	=	121
Thickness of each layer	=	12
Height of LT winding	=	200
Outer diameter of HT winding	=	170
Inner diameter of HT winding	=	125
Number of coils per limb	=	4
Height of core	=	360

Use five bakelite rings each of 4mm thickness at top and bottom.

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