

EDRG. 1

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Signature

MODEL QUESTION PAPER

FOURTH SEMESTER DIPLOMA EXAMINATION IN ELECTRICAL AND ELECTRONICS
ENGINEERING

ELECTRICAL DRAWING

(Maximum marks : 100)

PART-A

(Maximum marks : 10)

(2x5=10)

I. Answer the following questions in one or two sentences :

1. Draw the symbols of
 - i) Isolator
 - ii) Ceiling fan
2. Sketch the construction of pole with pole shoe.
3. Sketch the different types of slots.
4. Write the types of end covers used in induction motors.
5. List the types of rotors in alternator.

PART-B

(Maximum marks: 30)

(6x5=30)

II. Answer any *five* questions. Assume suitable dimensions.

- 1) Draw the neat sketch of the end view of the DC generator stator from the shaft end.
- 2) Draw a neat layout of an 11kV substation.
- 3) Draw a neat sketch of a salient pole rotor of a 4 pole 3 phase alternator.
- 4) Draw a neat sketch of different rotor constructions in 3 phase Induction motor
- 5) Draw a neat sketch of core type and shell type transformer.
- 6) Draw a neat sketch of transformer core and yoke.
- 7) Draw a neat sketch of a TEFC enclosure of an induction motor.

PART-C

(Maximum marks: 60)

(30X2=60)

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

III. Draw the half sectional end view of a 25kVA, 400V, 1500r.p.m, 3 phase alternator, the rotor is salient pole type. The main dimensions are:

Outside diameter of the stator stamping	=	400
Inside diameter of the stator stamping	=	290
Thickness of the stator frame	=	36
Slots: open type; 36 numbers: size 32 x 12		
Air gap	=	2
Pole axial length	=	135
Pole width	=	70
Pole height with shoe	=	75
Shoe height	=	18
Maximum width of base	=	480
No. of ventilating ducts	=	8
Shaft diameter:	at centre	= 27.5
	at bearing	= 55

OR

IV. (a) Draw a single line layout of 400kV substation with the following details:

400kV incoming line	=	2
220kV outgoing line	=	2
400/220kV 100MVA auto transformer	=	2

All protective devices should be clearly shown. (15)

(b) Draw a neat sketch of standard pipe earthing. (15)

V. Draw the half sectional end view of a 5HP 3 phase slip ring induction motor with the following dimensions:

Outside diameter of the stator stamping	=	288	
Inside diameter of the stator stamping	=	216	
Thickness of the stator frame	=	31	
Slots: Open type; 36 numbers; 18 x 12 size			
Airgap	=	2	
Outside diameter of rotor stamping	=	212	
Inside diameter of rotor stamping	=	36	
Rotor slots: Open type; 36 numbers; 12x8 size			
Shaft diameter : at centre	=	36	
: at bearing	=	32	(30)

OR

VI. (a) Draw the half sectional plan of one limb showing the winding on a core of an oil immersed transformer with following data:

Diameter of the core	=	240	
Number of steps	=	3	
Internal diameter of LT winding	=	254	
External diameter of LT winding	=	298	
Thickness of HT coil	=	23	
Outer diameter of coil	=	405.	(15)

(b) Draw three stepped and four stepped core sections of a transformer with diameter $d = 65\text{mm}$. Show clearly the dimensions in terms of the diameter of the circum circle.

(15)
