



Reg. No. :

Name :

**Seventh Semester B.Tech. Degree Examination, May 2014
(2008 Scheme)**

08.705 : ELECTRICAL DRAWING (E)

Time : 3 Hours

Max. Marks : 100

PART - A

Answer **any two** questions.

1. a) Sketch neatly a 400 kV double circuit transmission tower. 15
b) Draw neatly the half sectional view of a disc insulator. 10

2. a) Draw the half sectional elevation of the commutator assembly with the following dimensions. 15
Diameter of commutator = 13 cm
Pole arc length of commutator = 12 cm
Diameter of the shaft = 4 cm
Segment pitch with mica = 0.6 cm
Mica thickness = 0.1 m.
b) Draw the end sectional view of yoke and pole assembly of a 4 pole dc machine. 10
Armature diameter = 55 cm
Air gap length (radial) = 0.5 cm at main poles and 0.6 cm at interpoles.
Main poles laminated
Breadth of main pole = 14 cm
Arc of main pole = 20 cm
Height with shoe = 21 cm.
Inter poles
Breadth of interpoles = 4 cm
Outside diameter of yoke = 115 cm
The pole is fixed to the yoke using bolts and nuts.

3. Draw the single line layout of a 220 kV substation and mark all the equipments with specification. 25


 PART – B
 ETS

Answer **any one** question.

4. Draw to suitable scale half sectional elevation of a salient pole alternator. The rotor pole shoe is made of steel laminations and fixed over the hub by means of stud bolts, and the shaft is supported in the end shield bearings. The stator laminations are supported by means of two end plates, which are keyed to the yoke ?

Length of stator = 19 cm

Inside diameter of the stator = 32 cm

Outside diameter of the stator = 51 cm

Stator coil overhang on each side = 10 cm

Length of yoke = 24 cm

Overall height of the machine = 61 cm

Overall length of the machine = 50 cm

Assume any missing data.

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5. Draw the half sectional plan and half sectional elevation of a 10 HP, 3 phase, 50 Hz, 4 pole, squirrel cage induction motor with details given below :

Stator : Internal diameter of stator = 18 cm

Outside diameter of stator = 32 cm

Gross length of stator core = 13.5 cm.

(It has one ventilating duct of width 1.3 cm)

Slots = 36 numbers

Width = 0.77 cm

Length of air gap = 0.1 cm.

Rotor : Rotor bars = 0.51 cm × 1.52 cm

No. of slots = 31

End ring area = 1.69 cm²

Shaft diameter = 5.1 cm

Overall height of the motor = 47.5 cm.

The squirrel cage rotor is mounted directly on the shaft. Assume suitable dimensions and shapes for the motor frame and other parts.

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