

Reg.No.:.....

Name:.....

**Eighth Semester B.Tech Degree Examination,
(2013 scheme)**

MODEL QUESTION PAPER

13.803: ELECTRICALDRAWING (E)

Time:3 Hours

Max.Marks:100

PART -A

Answer **any two** questions(25 marks each)

1.Draw the sectional plan and elevation of a 500kv, 6600/400V single phase core type transformer.

Dimensions of the core:

Laminated steel plate of 0.35mm thickness

Diameter of core -33cm

Width of larger stamping -28cm

Width of smaller stamping -17.5cm

Height of core, H-43cm

Centre to center distance between core -49cm

Core laminations are fixed by means of two end plates 3mm thick by a bolt of diameter 1.2cm

Yoke height -25cm

Total height of transformer -99cm

2. Draw the half sectional end view of a rotor with following dimensions.

Shaft is made of mild steel and solid circular; radius of the shaft 3cm. Spider is made of cast steel and has four dovetail slots at its outer surface. The angle between the center lines of slot is 90.

The spider is square of sides 20cm.

Pole core: Height of pole core above dove tail =8cm

Height of dovetail in the pole core =2cm

Width of pole core =10cm

Width of pole face =5cm

Radius of the pole arc at the top of the pole face from the center of the shaft =20cm

Pole winding: Height of pole winding =8cm

Width of pole winding =15cm

Insulator between core and winding 0.2 cm

3.(a) Draw oil filled type bushing to suitable scale.

(b) Draw the single line diagram of a 220kv substation.

PART -B

Answer **any one** question (50 marks each).

4. Draw the half sectional end and half sectional elevation of a 10HP squirrel cage motor with following dimensions.

Inside diameter of stator -18cm

Length of stator -15cm

One radial cooling duct in stator and rotor 1cm wide

Stator slot size -0.95*2.9cm

No. of slots -36

Outside diameter of stator -32cm

Air gap length -0.06cm

Rotor has 31 slots of size 1cm diameter and is directly mounted over the shaft. Diameter of shaft below rotor is 2.5cm. The rotor of the shaft is supported by end cover by means of ball bearings. Other missing data may be assumed.

5. Draw the half sectional end and sectional elevation of a salient pole synchronous motor. Show clearly the method of fixing the pole with rotor spider and stator core with the frame:

Air gap diameter of stator= 39.37cm.

Outside diameter=56.51 cm.

Length of stator=13.33cm.

One radial cooling duct=1.27cm.

Length of yoke=31.75cm.

Overhang of stator coil in each side=11.7cm.

Rotor salient pole type

Outside diameter=38.37cm.

Coil winding in 3 steps, of width 4.76cm, 3.17cm & 1.58cm each of 2.54cm in height.

Pole width=7.62cm.

Pole height=7.62cm with shoe.

Pole arc=14cm.

No. of poles=6

The pole is mounted over the spider which is directly mounted over the shaft.

Overall length of the machine=56.99

The shaft is supported over the ball bearing in the end bracket. Other missing data may be assumed. Dimensioned all the parts as well as the assumed data.