Eighth Semester B.Tech. Degree Examination, May 2016
(2013 Scheme)
13.803: ELECTRICAL DRAWING (E)

Time: 3HOURS   Max.Marks:100

PART A
Answer **any two** questions:

1.   Draw the full sectional elevation and plan of a 3 phase transformer for the dimensions given below:

   Core dia-22cm
   Height of core-48cm
   Height of yoke-25cm
   Centre to centre distance between the cores-35cm   (25)

2.   (a). Draw the half sectional elevation of an armature commutator assembly for the given dimensions

   Armature dia-45cm, shaft dia-10cm
   Armature core length-22.5cm
   Armature winding overhang-15cm
   Commutator dia-28cm
   Length of commutator segment-10cm
Assuming missing data   (15)

   (b). Draw the half sectional view of a pin insulator   (10)

3.   Draw the single diagram of 220KV substation with all equipment and specifications.
   (25)

PART B
Answer **any one** question:

4.   (a) Draw a half sectional end view and longitudinal view of a 60HP, 4 pole DC shunt Motor with suitable scale.

   Armature-
   Outside dia=18.5cm, length=13.5cm
   No.of slots=24, size of slots=0.7*2
   Main pole
   Total Height=11cm, width=7cm
   Pole arc=10cm, length of pole=13cm
   Inter pole
   Size=2*10.8cm , length=11cm
   Commutator
   Dia=13cm, length=10cm
   Width of field winding=2cm
   Width of interpole winding =1cm
       Assume any missing data.Given that the armature is directly mounted on the shaft and is held between two end plates.   (30)

(b)With suitable scale draw 220KV double circuit transmission tower   (20)

5.   (a) Draw the following views of a 25 KVA, 400V,1500rpm, 50Hz.three phase salient pole
alternator.
   End view
    Stator: Outside diameter-400mm
                   Inside diameter-290mm
                   Thickness of frame-36mm
                   Core length-135mm
                    Slots open type 48 Nos-(32*12mm) size
                   Air gap length-2mm
     Rotor : pole length-135mm
                    Width-70mm
                   Height with pole shoe-75mm
                    Shaft dia-70mm
           Assume reasonable values for other missing data   (25)

   (b) Draw to a suitable scale a half sectional end view and half sectional longitudinal view of a squirrel
       cage induction motor with the following dimensions.
                    External diameter of stator stamping=69cm
                    Inside diameter of stator stamping =45cm
                   Stator core length=20cm
                   The stator has 54 slots and winding overhang 5cm on each side
                   External diameter of rotor stamping=44.75cm
                   Inside diameter of rotor stamping=25cm
                   Rotor has 43 slots .The end rings have a section of 0.73*3.5cm
                    The rotor is mounted on a spider fixed to the shaft by a key
                   Shaft dia=5cm
                   Total height of the motor=81cm
                    The rotor has ball bearings carried by the end shield .
   Assume all the other missing data   (25)