Seventh Semester B.Tech. Degree Examination, June 2018
(2008 Scheme)
08.705 – ELECTRICAL DRAWING (E)

Time : 3 Hours
Max. Marks : 100

PART – A

Answer any two questions.

1. a) Draw the structural details of a 220 kV double circuit transmission tower. 15
   b) Draw the half sectional view of a disc insulator for high voltage. 10

2. Draw the single line layout of a 220/11kV substation. 25

3. Draw the full assembled sectional plan of a 3Φ, 315 kVA, 11 kV/440 V transformer.
   Detailed dimensions of the parts are as follows:
   The maximum width of the core = 108 cm
   The maximum height of the core = 100 cm
   Yoke height = 25 cm
   Height of the limb = 50 cm
   Cross section of core = 3 stepped
   Diameter of circum circle = 24 cm
   Distance between adjacent centers of core = 42.5 cm
   Width of first step = 10 cm
   Width of second step = 16.8 cm
   Width of third step = 21.6 cm

   LT winding
   Outside diameter = 28.3 cm
   Inside diameter = 25 cm
   No. of turns per phase = 12

   HT winding
   Outside diameter = 41.5 cm
   Inside diameter = 34.3 cm
   No. of turns per phase = 572.

   25

P.T.O.
PART - B

Answer any one question.

4. Draw to a suitable scale the half sectional end view and half sectional front elevation of 50 kV DC generator with the main dimensions given below:
   Thickness of Yoke = 5 cm
   No. of main poles = 4
   Height of main pole with shoe = 14 cm
   Width of pole = 12 cm
   Length of pole = 19 cm
   Main pole winding = 7 cm x 3 cm
   Height of interpole = 10 cm
   Width of interpole = 4 cm
   Air gap = 0.4 cm
   External diameter of armature laminations = 38 cm
   Internal diameter of armature laminations = 20 cm
   Length of armature core = 24 cm
   Size of slots = 3.5 cm x 1.5 cm
   Armature winding overhang on each sides = 11 cm
   Diameter of commutator = 24 cm
   Shaft diameter at coupling end = 6 cm
   Length of yoke portion = 40 cm
   Length of commutator portion = 40 cm

5. Draw the half sectional front elevation and half sectional end view of a 20 kVA, 400 V, 1500 rpm, 3Φ alternator with the following dimensions. The rotor is salient pole type. Assume other missing data
   Length of stator core = 30 cm
   Outside dia of stator = 40 cm
   Inside dia of stator = 25 cm
   Pole height = 15 cm
   Outside dia of yoke = 95 cm
   Inside dia of yoke = 90 cm