

## B. Tech Degree VI Semester Examination April 2011

### EE 604 ELECTRICAL DRAWING (2006 Scheme)

Time : 3 Hours

Maximum Marks : 100

- I. Draw the developed winding diagram of lap winding for 6 poles, 18 slots, double layer winding showing the direction of motion, direction of induced emfs and position of brushes. (25)

OR

- II. Draw to a suitable scale the half sectional elevation of a dc machine as per the following dimensions:

Diameter of the shaft	=	13 cm
Outside diameter of the armature	=	36 cm
Number of poles	=	4
Pole height	=	16 cm
Pole width	=	12cm
Pole arc	=	0.65
No. of interpoles	=	4
Interpole dimensions	=	4cm x 15cm
Thickness of yoke	=	3.5cm
Depth of slot	=	2.5cm

(25)

- III. Draw the half sectional longitudinal view of a 10hp 3 phase 50Hz 4 pole squirrel cage induction motor with following dimensions:

**Stator**

Internal diameter of the stator	=	18 cm.
Outside diameter of the stator	=	32 cm.
Gross length of the stator core	=	13.5 cm.
No. of slots	=	36
Slot width	=	.77 cm.
Slot depth	=	3.4cm.
Length of air gap	=	0.1 cm.

**Rotor**

No. of slots	=	31
Rotor bars	=	0.51cm x 1.52 cm
Shaft diameter	=	5.1cm.

(25)

OR

(P.T.O)

IV. Draw the half sectional end view of an alternator with following dimensions:

Diameter of Shaft	=	7.6 cm	
Diameter of rotor	=	46 cm	
Height of pole	=	7.6 cm	
Outside diameter of stator	=	76 cm	
External diameter of supporting frame	=	92 cm	
Number of poles	=	10	
Overall distance of the base plate from the centre line of the alternator to the ground level.	=	50 cm.	(25)

V. Draw a winding diagram for a 4 – pole, 24 slot, 3 phase mush connected armature. (25)

**OR**

VI. For a 3 phase ac machine the armature is having 24 slots. A single layer concentric bifurcated winding for four poles is to be made. Draw the developed winding diagram with the overhang in three planes. (25)

VII. Draw the single line layout of a typical generating station. (25)

**OR**

VIII. (a) Draw a 220KV double circuit transmission tower. } (25)  
(b) Draw a 66KV single circuit transmission tower.

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