C 1126 (Pages : 2) Name.....

Reg. No.....

SIXTH SEMESTER B.TECH. (ENGINEERING) [09 SCHEME] DEGREE EXAMINATION, APRIL 2016

EE/PTEE 09 605—ELECTRICAL ENGINEERING DRAWING

Time : Three Hours Maximum : 70 Marks

Part A

Answer **all** *questions.*
Each question carries 2 *marks.*

I. (a) Draw the developed winding diagram of double layer lap winding for a DC machine having 18 armature slots, two conductors per slot and 6 poles. Also mark their brush position.

Or

(b) Draw a mush winding diagram for a 4-pole, 36 slots, three-phase armature.

(15 marks)

II. (a) Make a proportionate longitudinal cross-section of a limb of a 3-phase, oil cooled power transformer showing the HT and LT windings. Diameter of circumscribing iron core circle = 22.6 cm. Diameter of secondary winding in two concentric layers, inside 25 cm., outside 28.1 cm. Height of secondary winding = 41.2 cm., Diameter of primary winding, inside 32 cm., outside 36.8 cm., Total height of primary winding, including 10 spacers, 40 cm.

Or

(b) Draw the layout and single line diagram of a 11 kV outdoor distribution sub-station.

(20 marks)

III. (a) Draw the half sectional elevation and quarter sectional end of a 3-phase slip ring induction motor with the following dimensions :

Inside dia. of stator = 55 cm.
Stator length = 20 cm.
Stator overhang in each side = 10 cm.
Length of stator frame = 38 cm.
Diameter of rotor = 54.6 cm.
Total length of motor on footstep = 73 cm.
Height of base up to eye bolt = 93.04 cm.
Width at foot step = 92.76 cm.
Foot thickness = 5 cm.
Length = 14 cm.

Or

(b) Draw the half-sectional end and elevation views of a 25 kVA, 400 V, 1500 r.p.m., 3-phase salient pole alternator. The main dimensions are :

Outside diameter of stator stamping = 400 mm.
Inside diameter of stator stamping = 290 mm.
Thickness of stator frame = 36 mm.
Stator core length = 135 mm.
Slots-open type, 48 nos, size 32 × 12 mm. air gap = 2 mm.
Pole axial length = 135 mm.
Pole width = 70 mm.
Pole height with shove = 75 mm.
Shore height = 18 mm.
Shaft diameter at centre = 70 mm.
Shaft diameter at bearing = 55 mm.

Other missing data may be assumed.

(35 marks)