4467

BOARD DIPLOMA EXAMINATION, (C-14)
OCT/NOV—2018

DEEE—FOURTH SEMESTER EXAMINATION

ELECTRICAL ENGINEERING DRAWING

Time : 3 Hours]   [*Total Marks* : 60

PART—A   4×5=20

Instruction :   (1) Answer **all** questions.

                 (2) Each question carries **five** marks.

1. Draw the HRC Fuse (not to scale) indicating the constituents.   5

2. Draw the wiring diagram of star detail starter.   5

3. Draw the cross-sectional view of 3 core belted cable.   5

4. Draw a neat sketch of 220kV steel tower for double ckt and show all the clearances.

                                                                        5

PART—B   20×2=40

Instruction :   (1) Answer any **two** questions.

                 (2) Each question carries **Twenty** Marks.

5. (a) Draw the half-sectional end view looking from the shaft end of a 100 kW DC generator with following data :

    External diameter of armature stampings 42 cm

Internal dia of armature stampings 20 cm

No. of slots 39

Size of slot 4 × 1.2 cm

Height of pole 16 cm

Width of pole 12 cm

Interpole size 4.5 × 15 cm

Air gap at mainpole 0.5 cm

Air gap at interpole 0.7 cm

Thickness of yoke 6.8 cm

Assume any other missing data   10

   (b) Draw the development of single phase, single layer AC lap winding for a 4
        pole AC machine having 24 slots.   10

6. (a) Draw the following views of a single phase 220/110 5kVA core type transformer.

         ǀ Plan in full section

   The detailed dimensions of the parts are as follows:

   Core : Cross-section of the core = one step core

           Diameter of the circumcircle = 7.5 cm

           Distance between core centers = 15 cm

   L. T. Winding :

           Outside diameter of L. T. coil = 9 cm

           Inside diameter of L. T. coil = 8 cm

   H. T Winding :

           Outside diameter of H. T. coil = 13.5 cm

           Inside diameter of H. T. coil = 11 cm

   Other missing data may be assumed.   10

   (b) Draw the line diagram of 220 kV/132 kV substation   10

7. *(a)* Draw the half-sectional end-view of a 3 phase 440 Volts induction motor with the following dimensions.

Outer diameter of stator stampings 230 mm

Inner diameter of stator stamping 164 mm

Thickness of stator frame 25 mm

Type of slot open

No. of stator slots 36

Size of stator slots 15 × 8 mm

Width of air gap 2 mm

Outer diameter of rotor stampings 160 mm

Inner diameter of rotor stampings 35 mm

Shaft diameter at centre 35 mm

Shaft diameter at bearing 30 mm

Distance between bolt hole to bolt hole of footrest 185 mm

Total distance of footrest 220 mm

Assume any missing dimensions. 10

(b) Draw a neat schematic diagram of a 33/11 kV substation earthing system and label the important parts. 10

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