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BOARD DIPLOMA EXAMINATION, (C–16)

MARCH/APRIL—2018

DEEE—FOURTH SEMESTER EXAMINATION

ELECTRICAL ENGINEERING DRAWING

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

PART—A 5×4=20

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

(2) Each question carries **five** marks and all dimensions are in mm.

1. Draw a neat sketch of high rupturing capacity (HRC) fuse and label its parts. 4+1

2. Draw a neat sketch of 4-point starter for DC shunt motor and label the parts. 4+1

3. Draw a sketch of 132 kV steel tower for single circuit and mark the dimensions. 4+1

4. Draw a neat sketch of H-type cable and label the parts. 4+1

PART—B 20×2=40

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

(2) Each question carries **twenty** marks and all dimensions are in mm.

5. *(a)* Develop a simple lap winding for DC machine having 6 poles, 36 armature slots and one conductor per slot. 10

(b) Draw a neat sketch of pipe earthing with standard dimensions. 8+2

6. Draw the front elevation and plan of single phase 230/110 V, 5 kVA transformer with the following data : 10+10

Core :

Cross-section of the core	Single step core dimensions
Diameter of the circle	75 mm
Distance between the core centres	250 mm

Yoke :

Height of the yoke	80 mm

LT winding :

Outside diameter of LT coil	90 mm
Inside diameter of LT coil	80 mm
Height of LT winding	230 mm
No. of turns per limb	50 mm

HT winding :

Outside diameter of HT coil	135 mm
Inside diameter of HT coil	110 mm
Height of HT winding	230 mm
No. of turns per limb	100 mm
Overall height of yoke and core	400 mm

Assume all other missing data.

7. *(a)* Draw a neat sketch of a star/delta starter of a three-phase induction motor. 8

(b) Draw the half-sectional end view of a 5 HP squirrel-cage induction motor with the following dimensions : 12

(i) Outside diameter of stator stampings : 240 mm

(ii) Inside diameter of stator stampings : 160 mm

(iii) No. of stator slots : 36

(iv) Type of stator slot : Open

(v) Size of stator slot : 18 mm × 12 mm

(vi)	Thickness of stator frame	: 25 mm
(vii)	Width of air gap	: 2 mm
(viii)	Outside diameter of rotor stampings	: 156 mm
(ix)	Inside diameter of rotor stampings	: 35 mm
(x)	No. of rotor slots	: 30
(xi)	Type of rotor slot	: Open
(xii)	Size of rotor slot	: 10 mm × 5 mm
(xiii)	Inner dia. of lifting eye bolt	: 30 mm
(xiv)	Outer dia. of lifting eye bolt	: 40 mm
(xv)	Shaft diameter at center	: 35 mm

Assume missing dimensions and draw to a suitable scale.

★ ★ ★