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C09–EE–**408**

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BOARD DIPLOMA EXAMINATION, (C–09)

OCT/NOV—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.

(3) Drawing should be neat with necessary dimensions.

1. Draw the cross-sectional view of HRC fuse and label the parts.

2. Draw the free-hand sketch of an end view of a DC machine showing main pole and inter pole.

3. Draw a free-hand sketch of 132 kV tower for double circuit and mention the standard dimensions.

4. Draw the plinth mounted transformer with single pole neatly and label the parts.

PART—B 20×2=40

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

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

(3) Drawing should be neat with necessary dimensions.

5. *(a)* Draw the assembled sectionised view of the armature core, hub and shaft whose dimensions are as follows : 10

Diameter of the shaft	: 130 mm
Diameter of the core	: 900 mm
Diameter of the hub	: 770 mm
Radius from the centre of the axle to the bolt circle	: 210 mm
Diameter of bolt head	: 20 mm
Dimension of ventilating duct	: 200 mm towards bolt 240 mm towards axle
Distance of duct from the axle centre	: 105 mm
Flange thickness	: 20 mm
Depth of flange	: 90 mm
Length of core gap equally spaced	: 230 mm with 10 mm
Total distance between the two hubs	: 500 mm

Assume the missing dimensions.

(b) Develop a 3-phase single-layer wave winding for 24-slots, 4-pole AC induction motor. 10

6. Draw the sectional elevation and plan of a three phase transformer with the following data :

Cross-sectional of the core	: 3 stepped core
Diameter of the circum circle	: 24 cm
Distance between core centres	: 42·5 cm
Size of first core	: 21·6 cm
Size of second core	: 16·8 cm
Size of third core	: 10·0 cm
Height of yoke	: 25·0 cm
Overall height of yoke and core	: 100·0 cm

Length of core	:	108·0 cm
Outer dia of LT winding	:	28·3 cm
Inner dia of LT winding	:	25·0 cm
Height of LT winding	:	43·5 cm
Number of turns per phase	:	12
Outer dia of HT winding	:	41·5 cm
Inner dia of HT winding	:	34·3 cm
Height of HT winding	:	43·5 cm
Number of turns per phase	:	572

Assume any missing dimensions. 20

7. Draw the half-sectional elevation and view of a 3-phase 440-volts squirrel cage induction motor with the following dimensions : 20

Outer diameter of stator stampings	:	230 mm
Inside diameter of stator stampings	:	164 mm
Length of stator core	:	120 mm
Thickness of stator frame	:	25 mm
Type of slot	:	Open
No. of stator slots	:	36
Size of stator slots	:	15 mm × 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	:	185 mm
Total distance of footrest	:	220 mm

Assume any missing dimensions and label the parts.

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