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C14-EE- **407**

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BOARD DIPLOMA EXAMINATION, (C–14)
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.

1. Draw the following electrical symbols:

(a) Fuse

(b) Buzzer

(c) Diode

(d) Galvanometer

(e) Immersion Heater

2. Draw the wiring diagram of Rotor resistance starter.

3. Draw the minimum oil circuit breaker and lable the parts.

4. Draw the 132 kv steel tower for double circuit with all clearances.

PART—B

20×2=40

Instructions : (1) Answer *any* **two** questions.
(2) Each question carries **twenty** marks.

5. *(a)* Draw the half sectional elevation of the armature core, hub and shaft whose dimensions are as follows:

Diameter of the shaft : 163 mm

Diameter of the core : 528 mm

Diameter of the hub :465 mm

No. of slots :56

Radius from the centre of the axle to the bolt circle:170 mm

Width of the hub below the bolt : 32 mm

Width of the hub above the bolt : 10 mm

Flange thickness : 10 mm

Length of the core gap equally spaced : 250 mm with 14 mm spacer

Distance between the two hubs : 376 mm

Assume the missing dimensions.

(b) Draw the winding diagram and ring diagram for lap winding which has

(i) No.of poles = 4

(ii) No.of slots = 20

(iii) No.of conductors/slots = 2

(iv) No. of conductors = 40

(v) No. of commutator segments = 20

6. *(a)* Draw the sectional plan of three phase core type transformer with the following data :

Cross-sectional of the core : 3 stepped core

Diameter of the circum circle : 41.5 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
Outer dia of LT winding : 28.3 cm
Inner dia of LT winding 25.0 cm
Outer dia of HT winding : 41.5 cm
Inner dia of HT winding : 34.3 cm
Assume any missing dimensions.

6. *(b)* Draw the pipe earthing as per Indian Standards.

7. *(a)* Draw the half sectional end view of a 7 h.p. 400 V, 50 Hz, 3 phase, 1440 rpm slip ring induction motor.

The main dimensions (in mm) have been given below :

(i) Outside diameter of the stator stampings = 288
(ii) Inside diameter of the stator stampings = 216
(iii) Thickness of stator frame = 31
(iv) Slots
Type = open type
Number = 36
Size = 18×12
(v) Air gap = 2
(vi) Outside diameter of the rotro stamping = 212
(vii) Inside diameter of the rotor stamping = 36
(viii) Slots
Type = open
Number = 36
Size = 12×8
(ix) Shaft diameter
At centre = 36
At bearing = 32
(x) Ducts
Stator frame = 8
Rotor = 4
Spacing between ducts = equally spaced
Assume any other missing dimensions.

(b) Draw the plinth mounted transformer with two poles neatly and label it.

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