



C14-EE-407

4467

BOARD DIPLOMA EXAMINATION, (C-14)

OCT/NOV—2017

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 elevation and side view of protected flange coupling.

2. Draw the wiring diagram of autotransformer starter.

3. Draw the SF₆ circuit breaker and label the parts.

4. Draw the 33 kV concrete pole structure for single circuit and mark the clearances.

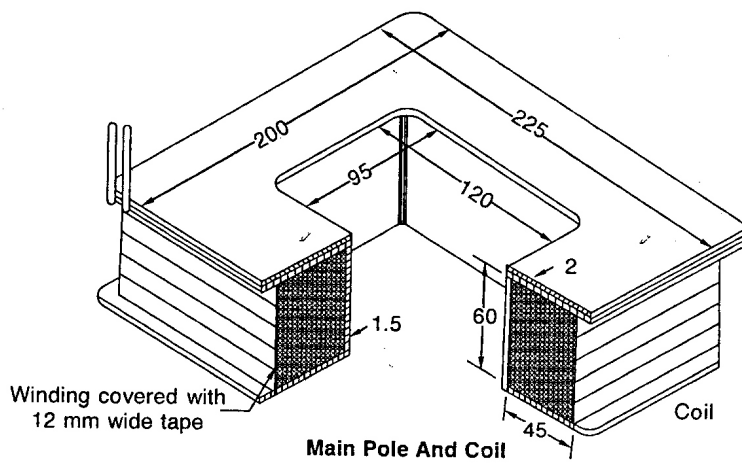
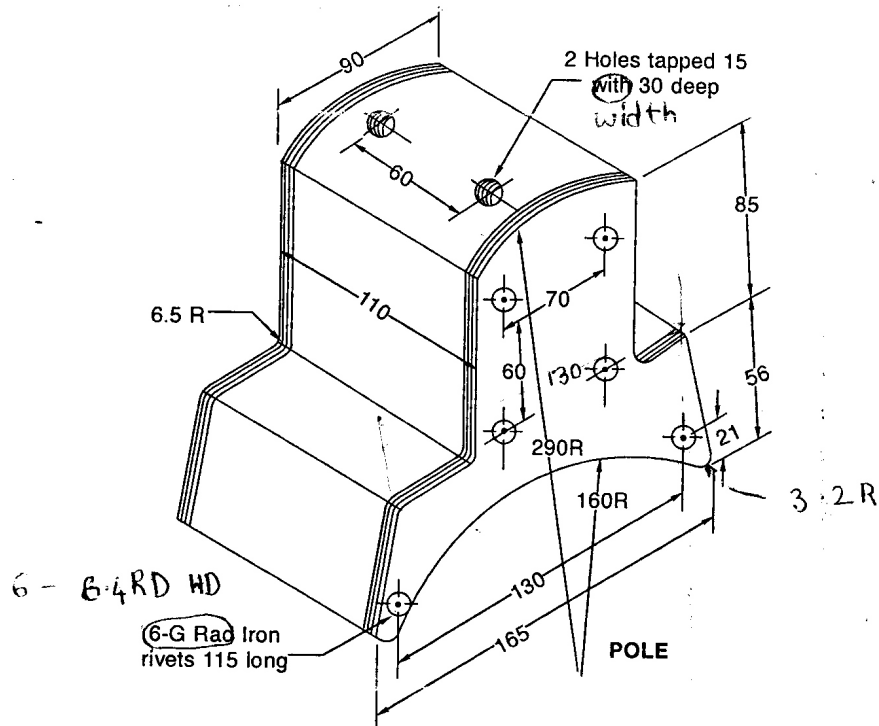
PART—B

20×2=40

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

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

5. (a) The isometric view of the field coil of a DC machine is shown in the figure below :



Draw the assembled sectional elevation and plan.

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(b) Develop a single-phase single-layer wave winding for a 4-pole AC machine having 24 slots. 10

6. (a) Draw the sectional plan of a 3-phase, 220/660 V, 10 kVA core-type transformer with the following data : 10

Cross-section of the core 3 stepped

Diameter of the circle 6.5 cm

Distance between core centers 18.5 cm

LT Winding :

Outer diameter of 1st layer 9.25 cm

Inner diameter of 1st layer 7.0 cm

Outer diameter of 2nd layer 12.1 cm

Thickness of each layer 1.2 cm

HT Winding :

Outer diameter of HT winding 17.0 cm

Inner diameter of HT winding 12.5 cm

Assume any missing data.

(b) Draw the single-line diagram of thermal power plants. 10

7. (a) Draw the half-sectional end view of 5 h.p., 400/440 V, 50 Hz, 1440 r.p.m., 3-phase squirrel cage induction motor. The main dimensions have been given below : 10

(i) Outside diameter of the stator stampings = 230

(ii) Inside diameter of the stator stampings = 164

(iii) Thickness of the stator frame = 25

(iv) Slots :

- Types = open type

- Number = 36

- Size = 15 × 8

(v) Air gap = 2

(vi) Outer diameter of the rotor stamping = 160

(vii) Inside diameter of the rotor stamping = 35

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(viii) Shaft diameter :

- At centre = 35
- At bearing = 30

The rotor has totally closed type slots and contains bare conductors which are short circuited at both sides.

Other missing data may be assumed (All dimensions are in mm).

- (b) Draw a neat schematic diagram of a transformer yard earthing system and label the important parts. 10

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