

6445

BOARD DIPLOMA EXAMINATION

MARCH/APRIL - 2019

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DIPLOMA IN ELECTRICAL AND ELECTRONICS ENGINEERING

ELECTRICAL ENGINEERING DRAWING

FOURTH SEMESTER EXAMINATION

Time: 3 Hours**Total Marks: 60****PART - A (5m x 4 = 20m)***Instructions: 1) Answer all questions**2) Each question carries 5 marks*

1. Draw the sectional end view and elevation of protected flange coupling assuming the shaft diameter 25 mm
2. Draw the face plate of a four point starter.
3. Draw a neat sketch of SF₆ Circuit Breaker and label the parts (not to scale)
4. Draw the 132 kV steel tower for double circuit with all clearances

PART - B (20m x 2 = 40m)*Instructions: 1) Answer any two questions**2) Each question carries 20 marks*

5. a) Develop a lap winding for the stator a 3-φ AC motor (induction type) having 24 slots with one conductor per slot and 4 poles full-pitch
- * b) Draw the neat schematic diagram of a transformer yard earthing system and label the important parts

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6. (a) Draw the sectional plan (sectional top view) of a 1-phase, 230/690-V, 15-kVA transformer with the following data:

Cross-section of the core: Cruciform type

Diameter of the core: 60 mm

Distance between core centres: 190 mm

Outer diameter of 1st layer of LT winding: 90 mm

Inner diameter of 1st layer of LT winding: 65 mm

Thickness of 2nd layer of LT winding: 12.5 mm

Inner diameter of HT winding: 125 mm

Outer diameter of HT winding: 175 mm

[Take suitable scale and assume any missing data]

- b. Draw the following core sections of a core-type transformer assuming circumference circle diameter 50 mm:

(i) Square type

(ii) Three stepped type

7. Draw the following views of a 3- ϕ , 440 V, 50 Hz squirrel cage induction motor

(a) Half-sectional front elevation

(b) Half-sectional end view

The dimensions are as follows:

Outside diameter of stator stampings = 230

Inside diameter of stator stampings = 164

Stator core length = 120

Thickness of stator frame = 25

Stator Slots:

Type = open type

Number = 36

Size = 15 x 8

Air gap = 2

Outside diameter of rotor stampings = 160

Inside diameter of rotor stampings = 35

Shaft diameter:

At center = 35

At bearing = 30

Total distance of foot rest = 220

All dimensions are in mm. Assume missing data if any