4467

C14-EE-**407**

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## BOARD DIPLOMA EXAMINATION, (C-14)

## JUNE—2019

## DEEE—FOURTH SEMESTER EXAMINATION

## ELECTRICAL ENGINEERING DRAWING

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

### PART—A 5×4=20

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

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

**1.** Draw a neat sectional view of HRC fuse and label the parts (not to scale).

**2.** Draw neatly the wiring diagram of Autotransformer starter used for 3-phase induction motor (not to scale).

**3.** Draw a neat cross-sectional view of 3-core belted cable and label the parts (not to scale).

**4.** Draw the neat sketch of 220 kV steel tower for single circuit with standard dimensions (not to scale).

### PART—B 20×2=40

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

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

(3) The scale should be be mentioned for dimensional drawing.

**5.** *(a)* Draw the half-sectional end view of DC generator looking from the shaft end with the following main dimensions : 10

| | | |
|---|---|---|
| External diagram of armature stampings | = | 420 mm |
| Internal diagram of armature stampings | = | 200 mm |
| No. of slots | = | 36 |
| Size of slots | = | 40 mm × 12 mm |
| Height of pole | = | 160 mm |
| Width of pole | = | 120 mm |
| Inter pole size | = | 45 mm × 150 mm |
| Air gap of main pole | = | 5 mm |
| Air gap of inter pole | = | 7 mm |
| Thickness of yoke | = | 68 mm |

Draw to a suitable scale and clearly mention the dimensions and name the parts. Assume any other missing data.

*(b)* Draw a simple wave winding diagram for a DC machine having 30 armature conductors and 4 poles. Also draw the ring diagram. 10

**6.** *(a)* Draw the half-sectional end view of a 10 HP, 440 V, 50 Hz, 3-phase, 1450 r.p.m. slip-ring induction motor with the following main dimensions : 10

| | | |
|---|---|---|
| Outside diameter of the stator stamping | : | 290 mm |
| Inside diameter of the stator stamping | : | 220 mm |
| Thickness of stator frame | : | 35 mm |
| Number of stator slots (open type) | : | 36 |
| Stator slot size | : | 18 mm × 12 mm |
| Air gap | : | 2 mm |
| Inside diameter of rotor stamping | : | 38 mm |
| Number of rotor slots (open type) | : | 36 |
| Rotor slot size | : | 12 mm × 8 mm |
| Shaft diameter at the centre | : | 38 mm |
| Shaft diameter at the bearings | : | 35 mm |

Number of ducts (equally spaced) on the stator frame : 8

Number of ducts (equally spaced) on the rotor frame : 4

Take suitable scale and assume any missing data. Clearly mention the dimensions and name the parts.

(b) Draw a neat sketch of 350 kVA, 11 kV/440V plinth-mounted distribution transformer sub-station with a two-pole structure. Clearly mention the names of various parts. 10

**7.** (a) Draw the sectional plan (sectional top view) of a 3-phase, 250 kVA, 11kV/400V transformer with the following main dimensions : 10

| | |
|---|---|
| Cross-section of the core | : 3-step core |
| Dia of the circum-circle | : 24 cm |
| Distance between the adjacent centers of core | : 42.5 cm |
| Outside diameter of LT coil | : 28.3 cm |
| Inside diameter of LT coil | : 25 cm |
| Outside diameter of HT coil | : 41.5 cm |
| Inside diameter of HT coil | : 34.3 cm |

Take suitable scale and assume missing data if any.

(b) Draw a neat sketch of Gl pipe earthing with proper dimensions as per Indian Standard and label the parts. 10

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