



C14-EE-407

4467

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 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.

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- (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 GI pipe earthing with proper dimensions as per Indian Standard and label the parts. 10
