

**6445****BOARD DIPLOMA EXAMINATION, (C-16)****MARCH / APRIL — 2021****DEEE — FOURTH SEMESTER EXAMINATION****ELECTRICAL ENGINEERING DRAWING***Time : Three Hours]**[Maximum Marks : 60***PART-A**

5×4=20

- Instructions :** (i) Answer **all** questions.
(ii) Each question carries **five** marks.

1. Draw the graphical electrical symbols of following :

- (a) Fluorescent lamp
- (b) Bell
- (c) Ceiling fan
- (d) Flood light
- (e) Fan regulator

2. Draw the end view of a DC Generator with four main poles (not to scale) fixed to the yoke.

3. Draw a neat sketch of a minimum oil circuit breaker and label the parts.

4. Draw a neat sketch of bow stay arrangements for LT pole with strain insulator.

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

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

5. (a) Draw developed diagram of single layer lap winding for a DC machine having 36 armature conductors and 6 poles. Also mark the brush position. 10

(b) Draw a neat sketch pipe earthing with pit dimensions and label the parts. 10

6. Draw the sectional elevation and plan of a single phase 220/660 V, 10 kVA transformer with the following data : 10+10

- | | |
|--|----------------|
| i. Cross-section of the core | 3 stepped core |
| ii. Diameter of the circle | 65 mm |
| iii. Distance between the core centres | 185 mm |
| iv. Height of yoke | 60 mm |
| v. Internal diameter LT winding | 70 mm |
| vi. Outer diameter LT winding | 120 mm |
| vii. Height of the LT winding | 200 mm |
| viii. Outer diameter of HT winding | 170 mm |
| ix. Inner diameter of HT winding | 125 mm |
| x. Number of HT coils per limb | 4 |
| xi. Overall height of yoke and core | 360 mm |

* Use five Bakelite rings each of 4 mm thickness at top and bottom. Assume other dimensions and draw to suitable scale.

7. (a) Draw the half-sectional end view of a 3-phase, 440 V squirrel cage induction motor with the following dimensions : 12

- | | |
|--------------------------------------|--------|
| i. Outer diameter of stator stamping | 230 mm |
|--------------------------------------|--------|

ii.	Inner diameter of the stator stamping	164 mm
iii.	Thickness of stator frame	25 mm
iv.	Type of slots	open
v.	Size of stator slots	15×8 mm
vi.	Width of air gap	2 mm
vii.	Outer diameter of rotor stamping	160 mm
viii.	Inner diameter of rotor stamping	135 mm
ix.	Shaft diameter at centre	35 mm
x.	Distance between belt hole to bolt hole	185 mm
xi.	Total distance at footrest	220 mm

Assume any missing dimensions and label the parts.

- (b) Draw a neat sketch of Star/delta starter of a 3-phase Induction motor and label the parts.

8

* * * * *