

Internal Assessment Test – 1

Sub: Computer Aided Electrical Drawing (Professional Elective)					Code: 18EE643	
Date: 11/05/2022	Duration: 90 mins	Max Marks: 50	Sem: 6	Section: A	A1/A2/A3	
Answer ANY One question. Explain your notations explicitly and clearly. Sketch figures wherever necessary. Use AutoCAD Software for drawing. Good luck!						
					Marks	
					OBE	
					CO	RBT
Q1. Draw the armature winding of a dc machine with the following data: no. of poles = 4; no. of slots = 16; double layer, simplex progressive lap. Show the position of the brushes, direction of the rotation of the machine when working as a generator, and the equalizer rings. Also, draw the sequence diagram.					[50]	CO1 L3
OR						
Q2. Draw the armature winding of a dc machine with the following data: no. of poles = 4; no. of coils = 15; double layer, simplex retrogressive lap. Show the position of the brushes, direction of the rotation of the machine when working as a generator, and the equalizer rings. Also, draw the sequence diagram.					[50]	CO1 L3

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Q2]. Simplex, Double Layer, Progressive Lap. - DLSPL

Given:

$$P = 4$$

$$Z = 24$$

$$\text{Pole pitch } y_p = \frac{Z}{P} = \frac{24}{4}$$

$$y_p = 6$$

$$\text{Back pitch } y_b = y_p \pm k$$

$$y_b = 6 + 1$$

$$y_b = 7$$

$$\text{Front pitch } y_f = y_b \pm 2x$$

$$y_f = 7 - 2(1)$$

$$= 7 - 2$$

$$y_f = 5$$

Pole Placement

Width:

$$\tau = y_p \times d$$

$$= 6 \times 10$$

$$\tau = 60 \text{ mm}$$

$$0.7\tau = 42 \text{ mm}$$

$$0.3\tau = 18 \text{ mm}$$

$$0.15\tau = 9 \text{ mm}$$

Length:

$$0.75 \times \text{length of conductor}$$

$$= 0.75 \times 50$$

$$= 37.5 \text{ mm}$$

Winding Table

1	$\xrightarrow{+7}$	8
3	$\xrightarrow{-5}$	10
5	—	12
7	—	14
9	—	16
11	—	18
13	—	20
15	—	22
17	—	24
19	—	26 (2)
21	—	28 (4)
23	—	30 (6)

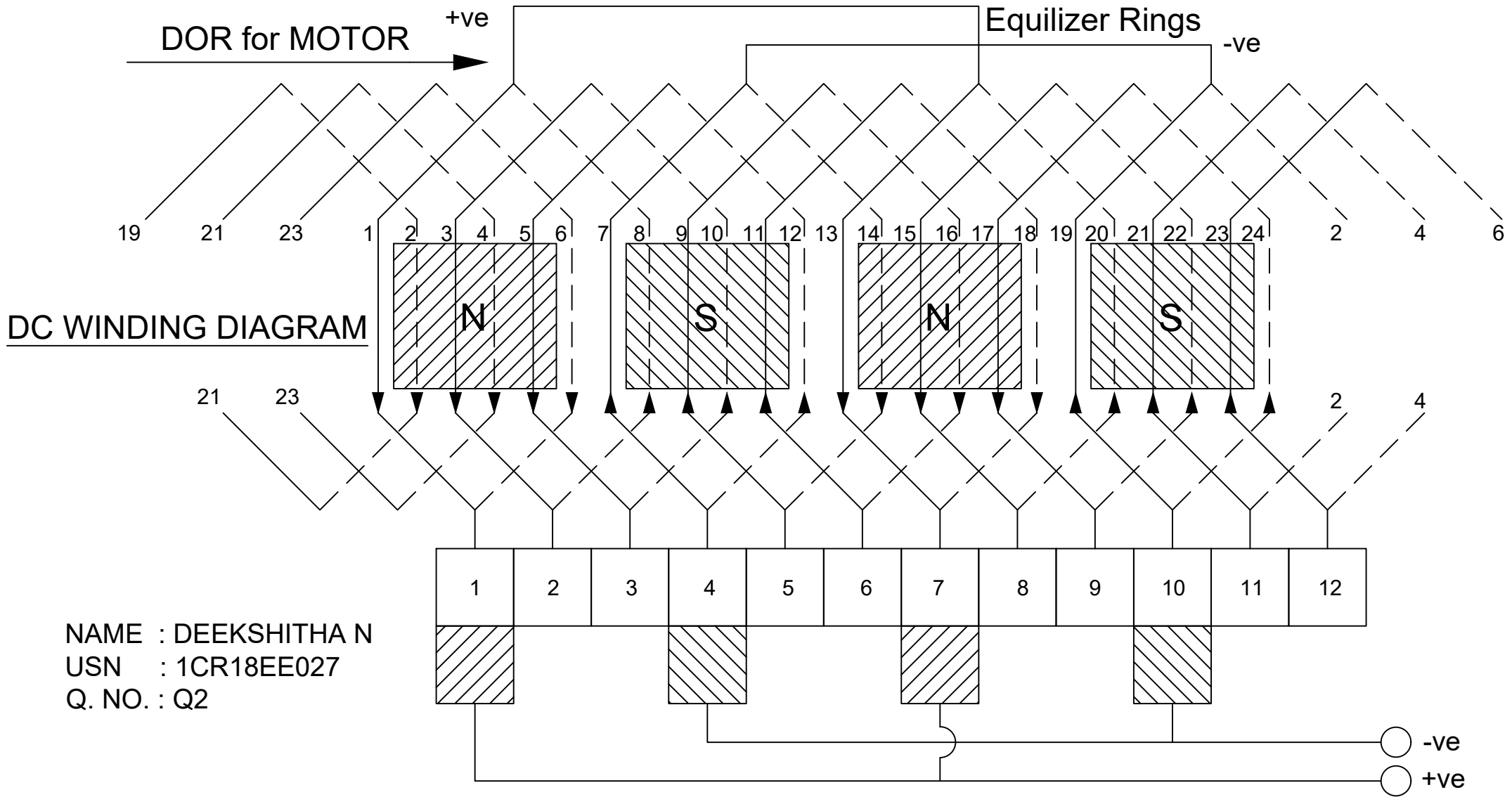
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DEEKSHITHA . N

1CR18EE027

Q. No. 2

Tel N



SEQUENCE DIAGRAM

