

B.E. Eighth Semester (Electrical Engineering) (CGS)

**10471 : Professional Elective - II : Electric Drives & Control : 8 EE 04 / 8 EP 04 / 8 EL 04**

P. Pages : 2

Time : Three Hours



**AU - 3026**

Max. Marks : 80

- Notes :
1. All question carry equal marks.
  2. Answer **three** question from Section A and **three** question from Section B.
  3. Due credit will be given to neatness and adequate dimensions.
  4. Assume suitable data wherever necessary.
  5. Illustrate your answer necessary with the help of neat sketches.
  6. Use of pen Blue/Black ink/refill only for writing the answer book.

**SECTION - A**

1. a) Explain what do you understand by steady state stability. What is the main assumption? 7
- b) Explain the various component of load torque. 6

**OR**

2. a) Explain the concept of Electrical drive with block diagram and state advantages. 7
- b) Explain the equivalent values of drive parameter. 6
3. a) What do you understand by soft start explain it for induction motor. 7
- b) State advantage and limitation of electric braking. 6

**OR**

4. a) Explain the concept of energy loss during starting. 6
- b) Explain Regenerative Braking of induction motor. 7
5. a) Explain the working of single phase separately excited dc motor drive. 7
- b) Explain Phase Locked Loop (PLL) control of DC drive. 7

**OR**

6. a) Explain with the circuit diagram three phase drive with different quadrant operation. 7
- b) Explain microprocessor control of D.C drive. 7

**SECTION - B**

7. a) Explain variable frequency control method in induction motor. 7
- b) Explain the microprocessor control based AC drive. 6

**OR**

- |    |    |                                                                      |   |
|----|----|----------------------------------------------------------------------|---|
| 8. | a) | Explain slip power recovery scheme for 3 phase induction motor.      | 6 |
|    | b) | Explain stator voltage control method for 3 phase induction motor.   | 7 |
| 9. | a) | Explain the principle of vector control drive.                       | 7 |
|    | b) | Explain vector of line side pular rectifier with neat block diagram. | 7 |

**OR**

- |     |    |                                                                       |   |
|-----|----|-----------------------------------------------------------------------|---|
| 10. | a) | Derive the equation for flux vector estimation.                       | 7 |
|     | b) | Explain vector control of cycloconverter fed drive (Scherbius drive). | 7 |
| 11. | a) | Explain the working principle of direct torque control system.        | 7 |
|     | b) | Explain the role of electric drive in sugar mills.                    | 6 |

**OR**

- |     |    |                                                   |   |
|-----|----|---------------------------------------------------|---|
| 12. | a) | Explain the important features of traction drive. | 7 |
|     | b) | Explain electric drive in textile mills.          | 6 |

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