

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (EEE) (Sem.-6)
ELECTRICAL DRIVES
Subject Code : BTEE-603C-18
M.Code : 79948
Date of Examination : 14-07-22

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly :

- a) What are the types of DC motor starter?
- b) Define duty cycle in DC chopper.
- c) Compare the D.C and A.C drives.
- d) What is the basic principle in v/f control.
- e) Draw speed-armature current characteristic of DC series motor.
- f) Define armature control method of DC shunt motor.
- g) List out the advantages of electrical braking over mechanical braking.
- h) What are the four quadrant DC drives.
- i) Define slip power recovery scheme.
- j) Give the reason for using starter in DC motor.

SECTION-B

2. With circuit diagram explain plugging method of braking of D.C. shunt motor and its torque speed-characteristics.
3. Explain Four-quadrant operation of DC motor drive.
4. Explain briefly about flux weakening operation of induction motor drives.
5. Describe the speed control of inverter-driven induction motor.
6. Explain the single-phase half wave converter drive speed control for DC drive with waveforms.

SECTION-C

7. Explain with neat sketches about the DC Shunt Motor speed control by using single phase fully controlled bridge converter.
8. Draw the power circuit arrangement of three phase variable frequency inverter for the speed control of three phase induction motor and explain its working.
9. Sketch and explain the circuit, using thyristor controller, to control the speed of a three-phase induction motor by varying the stator voltage. Mention the merits and demerits of this method. Also sketch and explain the torque-speed characteristics when stator voltage control is used.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.