

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/  
COMMERCIAL PRACTICE, NOVEMBER - 2023**

**INDUSTRIAL ELECTRONICS AND DRIVES**

[Maximum marks: 75]

[Time: 3 Hours]

**PART A**

**I. Answer all the following questions in one word or one sentence. Each question carries 1 mark**

**(9 x 1 = 9 Marks)**

		Module outcome	Cognitive level
1	Define the term holding current.	M1.01	U
2	SCR is equivalent to .....	M1.02	U
3	The turn on process of an SCR is called .....	M2.01	R
4	A switch having no moving parts is called .....	M2.04	R
5	The intrinsic stand off ratio of UJT is .....	M2.01	U
6	..... is the rotary part of an induction motor.	M3.03	U
7	..... device is used to obtain variable DC voltage from a constant DC voltage source.	M4.01	R
8	Write two applications of AC chopper.	M4.02	U
9	A DC drive is used for .....	M4.03	R

**PART B**

**II. Answer any eight questions from the following. Each question carries 3 marks.**

**(8 x 3 = 24 Marks)**

		Module outcome	Cognitive level
1	Draw the reverse recovery characteristics of power diode.	M1.01	U
2	Explain the constructional features of DIAC.	M1.03	U
3	Draw and mention the importance of snubber circuits.	M1.04	U
4	Draw the R triggering circuit.	M2.01	U
5	Write the operation of single phase inverter.	M2.03	U
6	State Flemming's left hand rule.	M3.01	U
7	Write the applications of single phase induction motor.	M3.03	U
8	Write notes of soft start of AC motors.	M3.04	U
9	Draw the circuit diagram of cycloconverter.	M4.01	U
10	Write the requirements of a variable speed drive.	M4.03	U

**PART C**

**Answer all questions. Each question carries seven marks**

**(6 x 7 = 42 Marks)**

		<b>Module outcome</b>	<b>Cognitive level</b>
III	With a neat diagram, describe the two transistor analogy of SCR. <b>OR</b>	M1.02	U
IV	Explain the structure and characteristics of TRIAC.	M1.03	U
V	Explain UJT relaxation oscillator with suitable diagrams. <b>OR</b>	M2.02	U
VI	Draw the circuit diagram and wave form of three phase inverter.	M2.03	U
VII	Draw and explain the load characteristics of series and shunt motors. <b>OR</b>	M3.02	U
VIII	Explain the methods of speed control of induction motors.	M3.03	U
IX	Describe the principle and operation of universal motor. <b>OR</b>	M3.03	U
X	With suitable diagram, describe the stepper motor.	M3.04	U
XI	Draw and explain three phase dual converter. <b>OR</b>	M4.01	U
XII	With suitable diagrams describe step up and step down chopper.	M4.02	U
XIII	(a) Applications of cycloconverters. (b) Draw the circuit diagram and wave form of AC chopper. <b>OR</b>	M4.01 M4.02	U U
XIV	Compare AC & DC drives.	M4.03	U

\*\*\*\*\*