TED (15/19) 4212

(Revision-2015/19)

N22-01215

Reg.No............................

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## DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/ COMMERCIAL PRACTICE, NOVEMBER - 2022

## INDUSTRIAL ELECTRONICS AND CONTROL DRIVES

[Maximum marks: 100]                                                     (Time: 3 Hours)

### PART – A
### Maximum marks : 10

I  (Answer **all** the questions in one or two sentences. Each question carries 2 marks)

1.  Define the term holding current.

2.  What is an inverter?

3.  Write Fleming's left hand rule.

4.  List the applications of servomotor.

5.  What is a chopper?                                                   (5 x 2 = 10)

### PART – B
### Maximum marks : 30

II (Answer any **five** of the following questions. Each question carries 6 marks)

1.  With figures briefly explain transistor analogy of SCR.

2.  Describe the constructional features of SCR.

3.  Describe the working of Triac light dimming circuit.

4.  Briefly describe Class A commutation.

5.  Explain the principle of operation of Universal motor.

6.  With a neat sketch briefly explain the working principle of DC tachogenerator.

7.  Briefly explain about AC Chopper.                                    (5 x 6= 30)

### PART – C
### Maximum marks : 60

(Answer one full question from each unit.  Each full question carries 15 marks)

### UNIT –I

III.(a) Explain the role of snubber circuit.                             (8)

(b) Describe RC triggering of SCR. (7)

<div align="center">OR</div>

IV.(a) Explain the working of Triac and draw its VI characteristics. (8)

(b) Describe R triggering of SCR. (7)

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**UNIT-II**

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V. (a) Explain single phase half wave bridge inverter. (8)

(b) Describe the working of class E commutation. (7)

<div align="center">**OR**</div>

VI.(a) Explain series inverter with a neat circuit diagram. (8)

(b) Explain in brief about static transfer switch. (7)

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**UNIT-III**

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VII.(a) Explain briefly the working of DC servomotor. (8)

(b) Explain the classification of DC motors. (7)

<div align="center">**OR**</div>

VIII.(a) Explain the principle of operation of stepper motor. (8)

(b) Describe briefly the working principle of a three phase induction motor. (7)

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**UNIT-IV**

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IX. (a) Compare AC and DC drives. (8)

(b) Explain the working of step up chopper. (7)

<div align="center">**OR**</div>

X. (a) List the applications of chopper and cycloconverter. (8)

(b) Describe the speed control method of DC drive. (7)

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