

**NETTUR TECHNICAL TRAINING FOUNDATION**  
**DIPLOMA IN ELECTRONICS ENGINEERING & EMBEDDED SYSTEM-CP04**  
**IV SEMESTER REGULAR & SUPPLEMENTARY EXAMINATION-JULY 2023**

**Subject: Industrial Electronics**  
**Subject Code: CP04405T**

**Total Time: 2 Hr.**  
**Total Marks: 50**

**PART B**

**1.0 ANSWER ANY EIGHT OF THE FOLLOWING** **2\*8=16**

- 1.1 What is the role of power electronics in current industries?
- 1.2 Draw the symbol of SCR and mark the terminals
- 1.3 Why IGBT is called as a voltage controlled device
- 1.4 How to select a Zener Diode in a Crow Bar circuit?
- 1.5 How protection circuits helps to safe guard the devices
- 1.6 What is the difference between uncontrolled rectifier & phase controlled rectifier?
- 1.7 Explain DC-DC Converter
- 1.8 Write the classification of rectifiers
- 1.9 What are the basic protection required for a SMPS?
- 1.10 What are the different methods to control the speed of a DC motor?

**2.0 ANSWER ANY SIX OF THE FOLLOWING** **3\*6=18**

- 2.1 How can we differentiate Power Electronics from Linear Electronics?
- 2.2 What are the different methods to turn on SCR?
- 2.3 Draw the V-I characteristics of TRIAC and mark the forward conduction region.
- 2.4 Write a short notes about dv/dt snubber circuit?
- 2.5 Draw the circuit diagram of symmetrical and asymmetrical configuration bridge rectifier
- 2.6 How the voltage is getting increased in a step up chopper?
- 2.7 Explain in detail about the classification of inverter.
- 2.8 With a neat block diagram, explain the working principle of V/F control.

**3.0 ANSWER ANY FOUR OF THE FOLLOWING** **4\*4=16**

- 3.1 With a neat diagram, draw the equivalent circuit of IGBT,& explain the working
- 3.2 With a neat block diagram, explain the working of SMPS circuits.
- 3.3 Explain about different braking modes of DC motor
- 3.4 Explain the working of a single phase cycloconverter with waveform.
- 3.5 Draw and explain about the working of Buck Converter, when the switch is ON and OFF.
- 3.6 Explain the working of power diode with a neat structural diagram

