NETTUR TECHNICAL TRAINING FOUNDATION

DIPLOMA IN ELECTRICAL & ELECTRONICS ENGINEERING – CP23

V SEMESTER REGULAR & SUPPLEMENTARY EXAMINATION-JAN 2023

Subject: Power Electronics-I **Total Time: 2 Hr.**

Subject Code: CP23503T **Total Marks: 50 Marks**

PART B

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

1.1 What are the types of power transistor?

1.2 What is the difference between BJT and MOSFET?

1.3 What is Snubber circuit?

1.4 Name the heat transfer techniques.

1.5 Draw the block diagram of linear power supply

1.6 Define power electronics & Write any 2 applications of power electronics

1.7 What do you understand by ripple factor?

1.8 What is commutation?

1.9 Draw the symbols for components a) BY229 b) IRF540.

1.10 Define Chopper

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

2.1 What is the difference between linear and power electronics?

2.2 What are the different methods to turn on the SCR?

2.3 Define a) duty cycle b) softness factor c) form factor

2.4 What is phase controlled rectifier and its types

2.5 Write the full form and draw the symbols a) GTO b) IGBT c) SCR

2.6 Write the difference between controlled and uncontrolled rectifier

2.7 Define a) Latching current b) Holding current

2.8 Draw the VI Characteristics of power diode.

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

3.1 Write down the control strategies of chopper

3.2 Draw and explain the working of boost convertor

3.3 Explain three phase half wave rectifier circuit with neat diagram

3.4 Define Thyristor and explain its modes of operations

3.5 Explain reverse recovery characteristics of power diode with proper diagram

3.6 What is di/dt in SCR? How SCR can be protected from this?