



**DIPLOMA IN ELECTRICAL AND ELECTRONICS  
ENGINEERING**

**CENTRALIZED QUESTION BANK**

**4030624 - Power Electronics Practical**

**DIRECTORATE OF TECHNICAL  
EDUCATION GOVERNMENT OF  
TAMILNADU**

## **DIPLOMA END SEMESTER / YEAR EXAMINATION – 2023**

**Course** : Electrical and Electronics Engineering

**Subject** : Power Electronics Practical

**QP Code** : 4030624

**Time** : 3 Hours    **Date** :

**Session:**

**Max Marks:** 100

### **ANSWER ALL THE QUESTIONS**

1. Construct the Line synchronized Ramp trigger circuit using UJT with AC Load to measure Firing Angles.
2. Construct Lamp control circuit using DIAC - TRIAC to measure various Output voltage for Firing Angles.
3. Construct and test the SCR Commutation Circuits (Class B & Class D).
4. Construct and test the Half Wave Controlled Rectifier with R- Load, RL Load.
5. Construct and test the Single Phase Fully Controlled Bridge with RL- Load and Free Wheeling Diode.
6. Construct and test the Single-Phase Semi Controlled Bridge with R- Load.
7. Construct and test the DC Chopper Control Circuit using Thyristor (any class).
8. Construct and test the Step-Up Chopper.
9. Construct PWM based Step Down DC Chopper using MOSFET/IGBT.
10. Construct and test the Single-Phase Single Pulse / Sinusoidal PWM Inverter using MOSFET/IGBT.
11. Construct and test the SMPS using MOSFET/IGBT.
12. Construct and test the Open Loop Speed Control Circuit for DC Shunt Motor and Single-Phase AC Motor.
13. Construct and test the Control Circuit using TRIAC for Universal Motor.
14. Construct and test the Closed-loop speed control for a DC and AC Motor.
15. Construct and test the Single-Phase Parallel Inverter using MOSFET/IGBT.
16. Construct and test the Single Phase to Single Phase Cyclo Converter.

### ALLOCATION OF MARKS

| <b>S.NO</b> | <b>NAME OF ACTIVITY</b> | <b>MARK ALLOCATION</b> |
|-------------|-------------------------|------------------------|
| 1.          | CIRCUIT DIAGRAM         | 25                     |
| 2.          | CONNECTIONS             | 25                     |
| 3.          | PROCEDURE               | 20                     |
| 4.          | READING/GRAPH/RESULT    | 25                     |
| 5.          | VIVA-VOCE               | 05                     |
| 6.          | TOTAL                   | 100                    |