

GUJARAT TECHNOLOGICAL UNIVERSITY

B. E. SEMESTER: V

POWER ELECTRONICS ENGINEERING

Subject Name: **Power Electronics Practice – I**

Subject Code: **152406**

Teaching Scheme				Evaluation Scheme		
Theory	Tutorial	Practical	Total	University Exam (Theory) (E)	Mid Sem Exam (Theory) (M)	Practical (I)
0	0	4	4	0	0	100

Suggested experiments

Sr. No.	Experiment Theme
Group-1 → Power Devices (At least 5 experiments to be performed)	
1	To obtain characteristics of DIAC
2	To obtain characteristics of UJT
3	Relaxation oscillator using UJT
4	To obtain characteristics of PUT
5	To obtain characteristics of Power Diode
6	To obtain characteristics of Power BJT
7	To obtain characteristics of SCR
8	To obtain characteristics of TRIAC
9	To obtain characteristics of Power MOSFET
10	To obtain characteristics of IGBT
Group-2 → Active Filter Circuits (At least 3 experiments to be performed)	
11	To obtain frequency response of OPAMP based LP filter circuit
12	To obtain frequency response of OPAMP based HP filter circuit
13	To obtain frequency response of OPAMP based BP filter circuit

14	To obtain frequency response of OPAMP based BR filter circuit
15	To obtain frequency response of State Variable filter circuit
16	To obtain frequency response of Biquad filter circuit
17	To realize Switched Capacitor Based Inverting Amplifier circuit
Group-3 → Signal Processing Circuits (At least 4 experiments to be performed)	
18	To realize V to F Converter circuit
19	To realize F to V Converter circuit
20	To realize mono-stable multi-vibrator circuit
21	To realize astable multi-vibrator circuit
22	To realize R-2R ladder based D to A Converter
23	To realize PWM circuit
24	To realize precision rectifier
25	To solve simultaneous equation using OPAMP
26	To solve differential equation using OPAMP

Note:

Only Laboratory oriented subject. This should cover at least 12 experiments for performance and 6 tutorials based on the on the theory of the subjects “**Power Electronics Devices and Components**” and “**Applied Power Electronics**” . Students can also be given a small circuit board for assembling.