GUJARAT UNIVERSITY
B.E. .EC SEMESTER V
Subject: Power Electronics

Question Bank

1	Describe the SCR characteristics in brief along with modes of operation.
2	Classify the power diodes & explain any two in brief.
3	Explain SCR triggering circuit in brief.
4	Explain the principle of Forced Commutation. Classify the same & give comparison with Natural Commutation
5	Discuss Power MOSFET.& IGBT in detail.
6	Explain the Performance parameters of rectifiers.
7	Discuss Flyback converters. With necessary waveforms & ckt diagrams.
8	Write a brief note on Cycloconvertor.
9	Explain the Snubber circuits for SCR.
10	Explain the principle of step up & step down converter.
11	Explain operating modes of the DC drives with necessary circuit diagram.
12	Draw & explain the single phase bridge invertors. Also give comparison of half bridge & full bridge inverter.
13	Write a detail note on Uninterruptible power supply.
14	Discuss the Snubber circuits & Cooling & Heat sinks for protection of the devices & circuits.
15	Discuss the concept of multilevel invertor.
16	Discuss in brief Static induction transistor & COOLMOSs
17	Enlist the thyristor family & describe the necessity of series & parallel connection of thyristors.
18	Explain the Two transistor model of Thyristor with due mathematics.
19	Explain the principal operation of pulse width modulated inverters.
20	Describe in brief the performance parameters for the single phase inverters.
21	Describe in brief the performance parameters for the Three phase inverters.
22	Explain the principal of the step up converter.
	Explain the principal of the step down converter.
23	For single phase half wave rectifier with purely resistive load R, determine the efficiency, the form factor & ripple factor.
24	What do you mean by an inverter? For a single phase centre tapped supply inverter has a resistive load of R = 1 kΩ and the dc supply voltage is 230 V. Determine the rms output voltage, voltage of the fundamental component, & the output power.
25	A single phase fully controlled bridge rectifier has an AC voltage of 230 rms applied to it. If it is an inverter with a DC source of 150 V estimate the trigger angle delay.
26	A three phase cycloconvertor supplies a single phase load of 250 V 50

	A. Find the input voltage & rms voltage.
27	Write short note on the followings
27.1	Three Phase semi converter
27.2	Three Phase full converter
27.3	Three Phase dual converter
27.4	Chopper circuit design
27.5	Electromagnetic interface
27.6	Single phase DC Drive
27.7	Flyback converters
27.8	UPS as AC power supply
27.9	Isolation of Base & Gate circuits
27.10	Free Wheeling Diode
27.11	Series resonator inverter
27.12	Parallel resonator inverter.
27.13	Application & Features of the Multilevel Inverters.
27.14	Power BJTs