

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VIII (NEW) - EXAMINATION – SUMMER 2018****Subject Code: 2182401****Date: 04/05/2018****Subject Name: Power Electronics Applications****Time: 10:30 AM to 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		MARKS
Q.1	(a) Define basic four types of power processing converters.	03
	(b) Explain merits and demerits of power electronics systems.	04
	(c) Draw the block diagram of power electronics system. Explain each block in detail.	07
Q.2	(a) Draw block diagram of active power filter.	03
	(b) Explain power electronics device based fan regulator.	04
	(c) Explain induction heating application of power electronics converter.	07
	OR	
	(c) Explain power electronics based refrigerator system.	07
Q.3	(a) How power electronics converters are useful in space applications ?	03
	(b) Give advantages of HVDC transmission system.	04
	(c) Explain on-line UPS in detail.	07
	OR	
Q.3	(a) Give advantages of LED lights.	03
	(b) Explain three types of DC links in HVDC transmission with diagrams.	04
	(c) Explain power factor correction with the help of power electronics converter.	07
Q.4	(a) What is electroplating ?	03
	(b) Give short description of solar power plant.	04
	(c) Explain the block diagram of electric motor drive.	07
	OR	
Q.4	(a) Describe electric welding in brief.	03
	(b) Give brief description of wind power plant.	04
	(c) Draw the block diagram of SMPS. Explain each block in detail.	07
Q.5	(a) Give advantages of hybrid vehicle.	03
	(b) Draw schematic diagram of typical HVDC converter station.	04
	(c) Explain speed control of BLDC motor with power electronics converter with necessary diagrams.	07
	OR	
Q.5	(a) What are the desired features of power supplies for microprocessors.	03
	(b) Give classification of FACTS controllers	04
	(c) Draw basic block diagram and circuit of CFL and explain its working.	07
