

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE- SEMESTER-V (NEW) EXAMINATION – WINTER 2020****Subject Code:3152410****Date:01/02/2021****Subject Name:Power Electronics in Consumer Products****Time:10:30 AM TO 12:30 PM****Total Marks: 56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		Marks
<b>Q.1</b>	(a) Define Power Electronics. With the help of block-diagram explain power electronic system.	<b>03</b>
	(b) Enlist any four important applications of power electronics in daily life.	<b>04</b>
	(c) Enumerate universal advantages and disadvantages of power electronic products.	<b>07</b>
<b>Q.2</b>	(a) Write a short note on CFL lamp.	<b>03</b>
	(b) Compare LED based tube light with conventional tube light.	<b>04</b>
	(c) Draw and explain the block diagram of IOT based controllable / dimmable lights.	<b>07</b>
<b>Q.3</b>	(a) Discuss power electronic converter used in washing machine.	<b>03</b>
	(b) Distinguish Inverter based Air Conditioner with conventional Air Conditioner.	<b>04</b>
	(c) Explain inverter based Air Conditioner. How it censors the bill?	<b>07</b>
<b>Q.4</b>	(a) Give a technical note on Vacuum cleaner with specification.	<b>03</b>
	(b) Discuss BLDC fan. Enlist the disadvantages of BLDC fan.	<b>04</b>
	(c) Explain power electronics circuits used in Elevator. Enumerate the advantages of PE based Elevators over conventional Elevators.	<b>07</b>
<b>Q.5</b>	(a) Write the specification of mobile charger and compare it with Tablets Charger.	<b>03</b>
	(b) Discuss regulated power supply used for internet Routers / Switches.	<b>04</b>
	(c) Draw and explain regulated power supply applicable to LED TV.	<b>07</b>
<b>Q.6</b>	(a) Discuss Induction Cooker.	<b>03</b>
	(b) Explain Induction cook tops & plats.	<b>04</b>
	(c) Draw and explain power electronic converter used in Induction water heater. Enlist its advantages over conventional water heater.	<b>07</b>
<b>Q.7</b>	(a) Write short notes on UPS.	<b>03</b>
	(b) Discuss types & role of converters in solar based agricultural pump.	<b>04</b>
	(c) Illustrate power electronics converter used in small roof top Solar Power Plant.	<b>07</b>
<b>Q.8</b>	(a) Write role of power electronics in Advertising Display Unit.	<b>03</b>
	(b) Discuss on charger for electric vehicle.	<b>04</b>
	(c) Draw and explain basic block diagram of ELCB.	<b>07</b>

\*\*\*\*\*