Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

		BE - SEMESTER-IV (OLD) - EXAMINATION – SUMMER 2017	
	•	et Code: 142002 Date: 12/06/20)17
Ti	ime: structi 1 2	t Name: Basic Mechatronics 10:30 AM to 01:00 PM Total Marks: 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks.	70
Q.1	(a) (b)	What is mechatronics? Describe the key elements of the mechatronics system with day to day life example. What is a piezo-electric transducer? List the advantages and disadvantages of piezo-electric transducers.	07 07
Q.2	(a) (b)	What is load cell? Explain any two types of load cells. Explain difference between Open-loop and Closed-loop Systems OR	07 07
	(b)	Explain Linear-Variable-Differential Transformer (LVDT) in detail.	07
Q.3	(a) (b)	What is Gear? List all the types of Gear. Also explain any five terms of gear. What is Bearing? Explain plain bearings and, Ball & roller bearings. OR	07 07
Q.3	(a) (b)	Write a short note on Stepper motors. Explain Check valve, Poppet valve and Spool valves.	07 07
Q.4	(a) (b)	Write short note on friction guideways. What is CNC machine? List all advantages, disadvantages and applications of CNC machine.	07 07
Q.4	(a) (b)	OR Explain speed control of three-phase induction motors. Write a short note on (i) Permanent Magnet DC (PMDC) motors (ii) D.C. Shunt motors	07 07
Q.5	(a) (b)	Draw block diagram of Intel 8085 microprocessor. Explain different types of buses in Microprocessor. OR	07 07
Q.5	(a) (b)	Explain any one mechatronics system with neat sketch. Explain different types of memories in Microprocessor.	07 07
