G AN	TO 1 AND
Seat No.:	Enrolment No.

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

ME SEMESTER II EXAMINATION – SUMMER - 2017

Su	Subject Code:2723110 Date:25/05/20		17
Ti	-	Name: Embedded Systems for Biomedical Applications 2:30 PM to 05:00 PM  Total Marks: ons:	<b>70</b>
	2.	Attempt all questions.  Make suitable assumptions wherever necessary.  Figures to the right indicate full marks.	
Q.1	(a) (b)	Explain Types of Embedded Operating systems in detail. Explain Architecture of Intel MCS51 in detail.	07 07
Q.2	(a)	Write a code to display "Embedded System" on first line of LCD 16*2 and "Biomedical" on second line of LCD.	07
	<b>(b)</b>	Explain Timer facilities available in Intel MCS51 in detail. Also enlist different SFR used for timer programming.	07
	<b>(b)</b>	<b>OR</b> Explain Timer facilities available in PIC16F877 in detail. Also enlist different	07
	, ,	SFR used for timer programming.	
Q.3	(a) (b)	Compare different Interrupt facilities available in MCS51 and PIC microcontroller. Write a c code to transmit "ABC" on hyper terminal using 8051.  OR	07 07
Q.3	(a)	Explain interfacing of DC motor with controller and write a c code for temperature controller.	07
	<b>(b)</b>	Write a c code to receive data from hyper terminal and send data to PORT B using PIC16F877.	07
Q.4	(a) (b)	What is system on chip? Explain it with examples. Explain different Scheduling Algorithms in RTOS.	07 07
Q.4	(a)	Explain difference between SPI and I <sup>2</sup> C serial communication with proper examples.	07
	<b>(b)</b>	Explain the multitasking feature supported by an RTOS.	07
Q.5	(a)	Design a Biotelemetry system for hospital. Explain required sensor specification, required hardware or component specification for your design with proper justification.	07
	<b>(b)</b>	justification. Write a c code for Biotelemetry system. Explain it with proper circuit diagram and flow chart.	07
Q.5	(a)	OR  Design a Blood pressure meter. Explain required sensor specification, required	07
£		hardware or component specification for your design with proper justification.	
	<b>(b)</b>	Write a c code for Blood pressure meter. Explain it with proper circuit diagram and flow chart.	07

\*\*\*\*\*