

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– VII (New) EXAMINATION – WINTER 2019****Subject Code: 2171711****Date: 30/11/2019****Subject Name: Embedded System Design****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) Enlist the features of RISC processor.	03
	(b) Classify Embedded system.	04
	(c) Define embedded systems. Explain the components of embedded system hardware.	07
Q.2	(a) List out the features of 8051 microcontroller.	03
	(b) Explain 3 stage pipeline concept of ARM Processor.	04
	(c) Explain programming model of ARM processor.	07
	OR	
	(c) Write a short note on “Development tool of ARM Processor”	07
Q.3	(a) Explain CPSR register of ARM processor.	03
	(b) List out the features of ARM processor.	04
	(c) List out data transfer instructions of ARM processor and explain any two with suitable examples.	07
	OR	
Q.3	(a) Write an assembly language program to load 32 bit data in any two registers and perform logical AND operation and store the result in any register.	03
	(b) What is importance of conditional execution explain with example.	04
	(c) List out arithmetical instructions of ARM processor and explain any two with suitable examples.	07
Q.4	(a) Write the features of CAN protocol.	03
	(b) What is the watchdog timer?	04
	(c) Write a program to turn ON LED's connected on P0.0 to P0.7 for LPC2148.	07
	OR	
Q.4	(a) Define Process, Thread and Task.	03
	(b) Mention advantages and disadvantages of USB protocol.	04
	(c) Explain SPI communication protocol in detail.	07
Q.5	(a) What is the interrupt? How interrupts are handled by RTOS.	03
	(b) Enlist RTOS task scheduling models	04
	(c) Explain memory management of RTOS.	07
	OR	
Q.5	(a) Explain the differences between Hard Real Time and Soft Real Time System.	03
	(b) Explain any application of Embedded System?	04
	(c) What is RTOS? Enlist the goals and services provided by RTOS.	07
