Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY ME – SEMESTER-1 (NEW) EXAMINATION – WINTER 2016

	Subject Code: 3715201 Date:04/01/2		017
Subject Name: Advanced Computer Architecture Time: 2:30 pm to 5:00 pm Instructions: Total Mar		2:30 pm to 5:00 pm Total Marks	: 70
	1. 2.	Attempt all questions.Make suitable assumptions wherever necessary.Figures to the right indicate full marks.	
Q.1	(a)	Differentiate between processor architecture and system architecture.	07
	(b)	Draw the diagram showing the internal organization of a processor and list down the main components of the processor architecture.	07
Q.2	(a)	What are the five most important goals of computer architecture Describe each one in detail.	? 07
	(b)	Explain the operation of Snoopy Protocol. OR	07
	(b)	Explain how pipelining works in a processor. Give advantages and disadvantages of pipeline architecture.	07
Q.3	(a)	(i)Explain why cache memory improves the performance of computer.	03
		(ii) What is the difference between synchronous and asynchronous bus?	04
	(b)	What are common problems faced while designing complex Integrated Circuit chips?	07
Q.3	(a)	OR (i)What do you understand by "Stored Program Model"? Why is it still used by almost 90% of computers in the world today?	03
		(ii) Explain briefly the issues involved in designing of multiprocessor system.	04
	(b)	What care must be taken to ensure that a hardware Macro is reusable	. 07
Q.4	(a)	Describe how standard I/O interface helps in connecting different types of I/O devices to a processor?	t 07
	(b)	In what way multimedia processor is different than a normal general purpose processor?	1 07
Q.4	(a)	OR Differentiate between SoC and ASIC. Explain with suitable example, how relevant technology is chosen for specific application.	07
	(b)	Describe the architecture of AVR microcontroller.	07
Q.5	(a)	What are the characteristics of a Digital Signal Processor ?	07

	(b)	(i) What are the three forms of SoC design?	03
		(ii) Describe major points of comparison between ARM controller and 8051.	04
		OR	
Q.5	(a)	Describe main features of the LPC2148 ARM Controller	07
	(b)	(i) Draw diagram and explain a typical Reset circuit used for 8051 microcontroller.	03
		(ii) List a few major features of MSP430 Processor.	04
