

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI (NEW) EXAMINATION – WINTER 2018

Subject Code:2161102

Date:27/11/2018

Subject Name:Advanced Microprocessor

Time: 02:30 PM TO 05:00 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) Discuss the need of advance microprocessors.	03
	(b) Explain ARM design philosophy	04
	(c) Describe ARM register set? Also specify the flags in ARM-7 processor?	07
Q.2	(a) List the RISC properties and explain RISC design philosophy.	03
	(b) Discuss the CPSR and SPSR with suitable example.	04
	(c) Explain addressing mode of ARM Processor with example.	07
	OR	
	(c) Describe ARM7TDMI programmer's model. Explain all registers of ARM7TDMI architecture.	07
Q.3	(a) What is the advantage of C language over assembly language?	03
	(b) Give the difference between	04
	(a) Little-Endian & Big-Endian	
	(b) Harvard & Von-Neumann Architecture	
	(c) Write an assembly language program to count even and odd numbers in an array.	07
	OR	
Q.3	(a) Give the difference between ARM state and Thumb state.	03
	(b) Explain following instructions:	04
	(i) ADD (ii) CMN (iii) TEQ (iv) TST.	
	(c) Write the Program in C for LPC 2148 to send "Hello" word continuously with baud rate of 9600, assume suitable clock frequency, no of stop bits, character length etc?	07
Q.4	(a) How virtual memory works.	03
	(b) Discuss the concept of Multitasking.	04
	(c) Explain memory management unit in ARM processor	07
	OR	
Q.4	(a) Give the C language instructions to define port pins P1.0 to P1.3 as output pins and P1.4 to P1.7 as input pins.	03
	(b) Explain role of The Translation Look aside Buffer (TLB).	04
	(c) What is the use of paging mechanism? Show how paging is done in any of ARM families of processors.	07

- Q.5 (a) Discuss the features inherited from RISC design by ARM processor architecture. **03**
- (b) Write short note on FIQ and IRQ. Why FIQ response is fast than IRQ? **04**
- (c) Explain various exception handling schemes used in ARM processor. **07**

OR

- Q.5 (a) Explain the GPIO functionality of ARM LPC2148. **03**
- (b) What is AMBA? Explain the AMBA bus architecture. **04**
- (c) List and explain the various ARM optimization techniques. **07**

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