Reg No.:_____   Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SEVENTH SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2018

Course Code: AE461
CourseName: ARM SYSTEM ARCHITECTURE

Max. Marks: 100   Duration: 3 Hours

PART A
Answer any two full questions, each carries 15 marks.

Marks

1	a)	What are the Challenges in Embedded Computing design process	(7)
	b)	Explain CPSR register in ARM7	(8)
2	a)	What are the difference between requirements and specification	(7)
	b)	What are the different types of exceptions in ARM.? Explain how exceptions are handled by ARM	(8)
3	a)	What are the functional and non-functional requirements in embedded system design process?	(8)
	b)	What is the need of instruction pipelining? Explain pipeline in ARM7TDMI core	(7)

PART B
Answer any two full questions, each carries 15 marks.

4	a)	Write the operation of following instruction i) STMFDsp!,{r1,r4} ii) LDR r0,[r1],#0x4 iii) STR r14,[r13, #-4]! iv) LDRB r14,[r3],#1	(8)
	b)	Explain SFR registers associated with timer	(7)
5	a)	How a 4-wire touch screen is interfaced with ARM processor	(8)
	b)	Explain the interfacing scheme for a simple I/O device with a block diagram	(7)
6	a)	What is logic analyzer? How it is used for debugging in embedded system design	(7)
	b)	What are the steps for configuring timer	(8)

PART C
Answer any two full questions, each carries 20 marks.

7	a)	Explain program structure of user, supervisor and kernel	(10)
	b)	How result is returned from functions in ARM	(5)
	c)	Explain stack implementation in ARM processor	(5)
8	a)	What are the data types and alignments in ARM architecture	(10)
	b)	Explain how switching is done between ARM sate and Thumb sate	(4)
	c)	Write a program for serially receiving a character at a baud rate of 9600	(6)
9	a)	With a block diagram explain ARM Development tool	(10)
	b)	What are the steps for configuring ADC	(10)

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