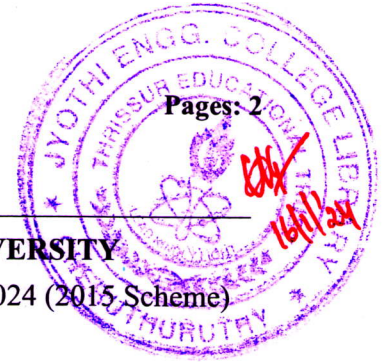Reg No.:_____   Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Sixth Semester B.Tech Degree (S, FE) Examination January 2024 (2015 Scheme)

Course Code: EC308

Course Name: Embedded Systems

Max. Marks: 100   Duration: 3 Hours

PART A

Answer any two full questions, each carries 15 marks

Marks

1	a)	Differentiate between RISC and CISC processors.	(5)
	b)	State the difference between I2C and SPI communication interface.	(6)
	c)	What are the challenges in the embedded system design process?	(4)
2	a)	Explain the CPU architecture of ARM9 with necessary block diagrams.	(10)
	b)	Explain the frame structure of CAN protocol.	(5)
3	a)	Explain the different phases of Embedded Product Development Life Cycle (EDLC).	(10)
	b)	How parallel communication is carried out using PCI?	(5)

PART B

Answer any two full questions, each carries 15 marks

4	a)	What are the functions of interrupt handling in device drivers?	(5)
	b)	List any five features of Embedded Java programming.	(10)
5	a)	How does the data transfer takes place through Direct Memory Access?	(10)
	b)	Explain boundary scanning technique for hardware testing.	(5)
6	a)	What are the modes of data transfer in DMA?	(4)
	b)	State any 4 functions of on board device drivers.	(4)
	c)	Differentiate between a simulator and emulator?	(7)

PART C

Answer any two full questions, each carries 20 marks

7	a)	What is Process Life Cycle? Explain the various activities involved in Process Life Cycle?	(10)
	b)	List and explain any four basic functions of a real time kernel.	(10)
8	a)	How task synchronisation is carried out using shared memory and message passing?	(10)
	b)	What are the features of Micro C/OS II RTOS?	(5)
	c)	Describe how memory management is done in RTOS.	(5)

9 a) Define the following terms in task synchronisation. (10)
    (i)   Deadlock
    (ii)   Mutual Exclusion
    (iii) Live lock
    (iv) Starvation

   b) Describe any five system level functions of Micro C/OS II RTOS. (10)

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