

06EC6035

Reg. No _____

Name _____

A P J ABDUL KALAM TECHNOLOGICAL UNIVERSITY**M.TECH DEGREE EXAMINATION, DECEMBER 2017****FIRST SEMESTER****Branch: VLSI & Embedded Systems****Advanced Microcontrollers & Real Time Operating Systems****Time: 3 Hours****Max. Marks: 60****PART A***Answer ALL questions*

1. Explain nested and non-nested interrupt handling schemes.
2. Write a routine to implement round robin with interrupts.
3. List the functions of BSP and explain them in detail.
4. What is the relevance of software performance engineering?

(4 x 5 marks =20 marks)**PART B**

5. Explain the different modes of operation in ARM11 Microprocessor family.
- OR
6. Discuss the pipeline stages in ARM11 processor family with the help of neat diagram.

7. (a) Discuss different task states. List two methods for task scheduling. [4]
(b) Explain the flow of an RTOS architecture using program routine. [6]

OR

8. (a) What is the significance of Semaphore? Write a routine to show how semaphore is used in RTOS. [5]
(b) Explain: (i) Message queues (ii) Mail boxes and pipes. [5]

9. Explain the compilation process in software development for embedded systems.

OR

10. Write short notes on (i) ICE (ii) buffer exchange.

11. How can smart cards used for ATM transactions be designed?

OR

12. Discuss the design of traffic light system for a four-way junction. Also, mention the requirements of Real Time Operating Systems in it.

(4 x 10 marks =40 marks)

DEPT OF ECE
SCMS COCHIN