

INSTITUTE OF AERONAUTICAL ENGINEERING
(AUTONOMOUS)

Code No: **BES214**

MODEL QUESTION PAPER - II

M-Tech I Semester Regular Examinations, February 2017

REAL TIME SYSTEMS

(Embedded Systems)

Time: 3 hours

Max. Marks: 70

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

UNIT I

1. (a) Explain i)fork ii) vfork iii)exit iv)wait v) waitpid
[7M]
- (b) Write about the kernel services in an OS
[7M]
2. (a) What are the basic operating system services available? Explain how to perform memory management for a specific operating system
[7M]
- (b) Explain file I/O functions: Lseek, open, Read, Write.
[7M]

UNIT II

3. (a) Define scheduler. Explain any scheduling algorithm?
[7M]
- (b) What are the various RTOS task scheduling models available? Explain any one of them in details?
[7M]
4. (a) Explain the message queue and different states in queue?
[7M]
- (b) Explain briefly about semaphores with examples?
[7M]

UNIT III

5. (a) Define the table for kernel services in an operating system with functions and actions [7M]
- (b) Explain the event registers and signals with examples [7M]
6. (a) Differentiate process and thread and define task and explain with diagram all the five states of task [7M]
- (b) Explain the basics I/O concepts with examples [7M]

UNIT IV

- 7.(a) What are the applications of exceptions and interrupts in RTOS [7M]
- (b) Explain the exceptions and what is the process of handling exceptions? [7M]
8. (a) Explain the interrupts, spurious interrupts with examples [7M]
- (b) Explain the Interrupt service routines in an RTOS [7M]

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UNIT V

9. (a) Explain all the specifications of Hardware architecture of ACVM system. [7M]
(b) Draw and explain the architecture for Air Traffic Control(ATC).
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[7M]
10. (a) Illustrate the block diagram of Automatic Chocolate Vending Machine System(ACVM)
[7M]
(b) Define porting of RT Linux .Discuss general requirements of processor to port RT Linux along with hardware/software architecture
[7M]