Code No: **R42049** **R10** **Set No. 1**

IV B.Tech II Semester Regular/Supplementary Examinations, April/May - 2016

REAL TIME OPERATING SYSTEMS

(Common to Electronics & Communication Engineering, Electronics & Instrumentation Engineering and Electronics & Computer Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
*****

1	a)	Discuss about Interrupt Routines in RTOS Environment.	[8]
	b)	What are the issues to be considered for OS Security?	[7]
2	a)	What are the different Types of RTOS for Embedded Systems?	[7]
	b)	Explain about the mCOS-II programming model.	[8]
3	a)	How to develop the java programming concepts for windows CE.	[7]
	b)	What are the Real Time Thread Functions in RT Linux?	[8]
4	a)	Explain about the design metrics for Automatic Chocolate Vending Machine (ACVM) Using Mucos RTOS.	[7]
	b)	Discuss about Multiple tasks and their synchronization model using semaphores and mailbox messages.	[8]
5	a)	Explain Communication Model for Robot Orchestra with neat diagram.	[7]
	b)	Explain about the Case Study of Embedded System for Mobile Phone Software for Key Inputs.	[8]
6	a)	Explain the Off-The-Shelf Operating Systems.	[7]
	b)	Discuss about the Operating system software for target image creation.	[8]
7	a)	Explain the shell programming model.	[7]
	b)	How to use the different types of shells in programming model?	[8]
8	a)	Discuss about the overview of RT Linux.	[7]
	b)	Explain the Case Study of Appliance Control by RT Linux System.	[8]

Code No: **R42049** **R10** **Set No. 2**

IV B.Tech II Semester Regular/Supplementary Examinations, April/May - 2016

REAL TIME OPERATING SYSTEMS

(Common to Electronics & Communication Engineering, Electronics & Instrumentation Engineering and Electronics & Computer Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
*****

1	a)	List the functions and activities for Real- Time Operating Systems.	[8]
	b)	How to handle Interrupt Source Calls in Real- Time Operating Systems?	[7]
2	a)	Explain the programming concepts for mCOS RTOS with relevant Examples.	[7]
	b)	Discuss about the Vx real time operating system with programming model.	[8]
3	a)	Explain the standard protocols for RTOS OSEK.	[7]
	b)	List out RT Linux basic features and explain them briefly.	[8]
4	a)	Explain about the case study for sending application layer byte streams on a TCP/IP Network using RTOS Vx Works.	[7]
	b)	Draw the architecture for Automatic Chocolate Vending Machine (ACVM) Using Mucos RTOS.	[8]
5	a)	Explain the Case Study of Inter-Robot Communication in a Robot Orchestra.	[7]
	b)	Explain the basic features for Embedded System in Automobile.	[8]
6	a)	Discuss about Porting RTOS on a Micro Controller based Development Board.	[7]
	b)	How to create the target image creation for Window XP operating systems.	[8]
7	a)	Discuss about the different types of shells in LINUX.	[7]
	b)	Explain the programming concepts of Unix.	[8]
8	a)	Discuss about the semaphore management in RT Linux.	[7]
	b)	Write a program to display a message periodically in Linux.	[8]

Code No: **R42049** **R10** **Set No. 3**

IV B.Tech II Semester Regular/Supplementary Examinations, April/May - 2016

REAL TIME OPERATING SYSTEMS

(Common to Electronics & Communication Engineering, Electronics & Instrumentation Engineering and Electronics & Computer Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
*****

1	a)	Explain about the Task Scheduling Models for RTOS.	[8]
	b)	Discuss about the OS Services.	[7]
2	a)	List out the features of Vxworks operating system and briefly explain them.	[6]
	b)	Discuss about the uses of mCOS Real time operating system with programming model.	[9]
3	a)	Explain about the programming model for RTOS OSEK.	[7]
	b)	Explain the RTOS Linux 2.6.x architecture with neat diagram.	[8]
4	a)	Write coding for an Automatic Chocolate Vending Machine (ACVM) Using Mucos RTOS.	[7]
	b)	How to use the TCP/IP Network in Vx Works RTOS?	[8]
5	a)	Draw the block diagram for an Adaptive Cruise Control (ACC) System in Car and explain it.	[7]
	b)	Discuss about the Smart Card Hardware architecture with neat diagram.	[8]
6	a)	How to use the Off-The-Shelf Operating Systems?	[7]
	b)	What are the differences between CTOS and RTOS? Explain them briefly.	[8]
7	a)	Discuss the programming concepts of Linux Programming.	[7]
	b)	Explain about the system programming model.	[8]
8	a)	Explain the mutex management in RT Linux.	[7]
	b)	Discuss Linux API model for RT Linux.	[8]

Code No: **R42049** **R10** **Set No. 4**

IV B.Tech II Semester Regular/Supplementary Examinations, April/May - 2016

REAL TIME OPERATING SYSTEMS

(Common to Electronics & Communication Engineering, Electronics & Instrumentation Engineering and Electronics & Computer Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
*****

1	a)	Explain about the File and IO Systems Management for RTOS.	[8]
	b)	Briefly explain about performance metrics for RTOS.	[7]
2	a)	Compare and contrast mCOS-II and Vx Works RTOS.	[7]
	b)	Explain about the different types of real time operating systems with examples.	[8]
3	a)	Discuss about the programming model for RT Linux Operating system.	[7]
	b)	Compare different programming models for RTOS.	[8]
4	a)	Explain about the digital camera hardware and software architecture with neat sketch.	[7]
	b)	Write about embedded system design and coding for an Automatic Chocolate Vending Machine (ACVM).	[8]
5	a)	Explain the design metrics of Embedded System for a Smart Card.	[7]
	b)	Explain the Case Study of Orchestra Robots for RTOS-II	[8]
6	a)	Discuss Target Image Creation for Window XP Embedded system.	[7]
	b)	Write short notes on operating system software.	[8]
7	a)	Explain the shell programming commands for LINUX operating system.	[7]
	b)	Explain about the UNIX file hierarchy in system programming model.	[8]
8	a)	How to display a message periodically in RT Linux program model?	[7]
	b)	Develop Appliance Real Time Control in Heterogeneous Operating Systems.	[8]