AR16

CODE: 16EC4037 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.Tech II Semester Regular Examinations, September, 2020

EMBEDDED & REAL TIME OPERATING SYSTEMS

(Electronics and Communication Engineering)

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 at one place

UNIT-I

1.	a)	List and define three main characteristics of embedded system that distinguish such systems from other computing systems	7M
	b)	Explain how to optimize a custom single purpose processor design?	7M
		(OR)	
2.	a)	Explain about software development process of an embedded system	7M
	b)	Describe why general purpose processor could cost less than a single purpose processor you design yourself?	7M

UNIT-II

3.	a)	Explain about concurrent process model	7M
	b)	Explain how to create and terminate a process	7M
		(OR)	
4.	a)	Explain how Communication takes place among processes	7M
	b)	Write short notes on real time systems	7M

UNIT-III

5.	a)	With neat figure explain the RS232 interface	7M
	b)	Explain about Ethernet	7M
		(OR)	
6.	a)	Explain about IEEE1394 Firewire	7M
	b)	Explain about Bluetooth	7M

UNIT-IV

7.	a)	Write architecture of a kernel	7M
	b)	What is mutex? Write its significance	7M
		(OR)	
8.	a)	Explain about event registers and pipes	7M
	b)	Explain about mail box and message queues	7M

UNIT-V

9.	a)	Write any open source embedded operating systems and explain their features	7M
	b)	What are the differences in operating systems	7M
		(OR)	
10.	a)	List various mobile/handheld operating systems and explain their features	7M
	b)	Explain about Timers and memory management	7M

AR16

CODE: 16CS4036 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.Tech II Semester Regular Examinations, September, 2020

MOBILE AD HOC AND SENSOR NETWORKS
(Computer Science and Engineering)

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 at one place

UNIT-I

1.	a)	List and explain the applications of MANETs.	7M
	b)	Differentiate between cellular and adhoc wireless networks.	7M
		(OR)	
2.	a)	Briefly explain the security threats in adhoc wireless networks.	7M
	b)	What are the major issues to be considered for a successful ad hoc wireless Internet?	7M

UNIT-II

3.	a)	List the design goals of a MAC protocol for ad hoc wireless networks.	7M
	b)	Explain about floor acquisition multiple access protocols.	7M
		(OR)	
4.	a)	Explain in detail about hidden and exposed terminal problems.	7M
	b)	Explain distributed packet reservation multiple access protocol.	7M

UNIT-III

5.		Explain in detail about DSDV routing protocol.	14M
		(OR)	
6.		Explain in detail about DSR routing protocol.	14M

UNIT-IV

7.	a)	List the reasons that sensor networks pose certain design challenges.	7M
	b)	Explain the clustered architecture of sensor networks.	7M
		(OR)	
8.	a)	Give the applications of sensor networks.	7M
	b)	Compare wireless sensor networks with Adhoc wireless networks.	7M

UNIT-V

9.	a)	Explain about location discovery of sensors.	7M
	b)	Write short notes on security in sensor networks.	7M
		(OR)	
10.		Discuss in detail on quality of sensor networks.	14M

AR16

CODE: 16IT4005 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech II Semester Regular Examinations, September, 2020

PARALLEL COMPUTING
(INFORMATION TECHNOLOGY)

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 at one place

UNIT-I

1.	a)	Examine early ways to form a cluster.	7M
	b)	Explain Distributed Shared Memory.	7M
		(OR)	
2.	a)	Visualize MIMD and SIMD classification	7M
	b)	Contrast demand for increase computational speed.	7M

UNIT-II

3.	a)	Demonstrate single program multiple data model	7M
	b)	Analyse various debugging strategies	7M
		(OR)	
4.	a)	Differentiate between MPI and PVM with exemples	7M
	b)	Explain the message Passing Routines.	7M

UNIT-III

5.	a)	Explore pipeline for frequency filters	7M
	b)	Explain the step in insertion sort with five numbers	7M
		(OR)	
6.	a)	Classify various pipelining techniques	7M
	b)	Explain the types of pipeline computations with examples	7M

UNIT-IV

7.	a)	Explain barrier implementation in message passing systems	7M
	b)	What is a Load balancing? Justify Dynamic Load Balancing with example	7M
		(OR)	
8.	a)	Discuss ring termination algorithm	7M
	b)	Differentiate between centralized and de-centralized work pool	7M

UNIT-V

9.	a)	Discuss about distributed shared memory systems	7M
	b)	Explain distributed shared memory programming primitives	7M
		(OR)	
10.	a)	Explain in detail various sorting algorithms.	7M
	b)	Compare and contrast sorting vs. numerical algorithms with examples	7M