PAPER ID-420253

Subject Code: KOE061

Roll No: | | | | | | | | | | | | | |

BTECH
(SEM VI) THEORY EXAMINATION 2021-22
REAL TIME SYSTEMS

Time: 3 Hours ***Total Marks: 100***

Note: Attempt all Sections. If you require any missing data, then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2*10 = 20

Q.no	Questions	Marks	CO
(a)	What do you mean by Real Time Systems?	2	1
(b)	What is an Embedded system? Differentiate between embedded system and real-time system.	2	2
(c)	Define TargetOS.	2	2
(d)	Discuss about the Real Time Applications.	2	1
(e)	Compare open system compare with a close system?	2	3
(f)	What do you understand by the Multiple-Unit Resources?	2	3
(g)	What do you understand by the Real Time Communication?	2	4
(h)	What is meant by QoS routing?	2	4
(i)	What do you understand by the Real Time Operating Systems?	2	5
(j)	Define the term Real Time Databases.	2	5

SECTION B

2. Attempt any *three* of the following: 10*3 = 30

Q.no	Questions	Marks	CO
(a)	Explain the concept and application of Commercial Real Time databases.	10	5
(b)	What is the difference between synchronous and asynchronous I/O? Which one is better suited for use in real -time applications?	10	2
(c)	Explain the concept of Stack Based Priority Ceiling Protocols in Real Time Resources Sharing.	10	3
(d)	Describe the concept of Internet and Resource Reservation Protocols.	10	4
(e)	What is the difference between a performance constraint and a behavioral constraint in real time system?	10	1

SECTION C

3. Attempt any *one* part of the following: 10*1 = 10

Q.no	Questions	Marks	CO
(a)	What are the drawbacks in using Unix kernel for developing real time applications?	10	5
(b)	Compare and contrast Offline Scheduling Versus Online Scheduling in Real Time Scheduling.	10	2

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4. Attempt any *one* part of the following: 10 *1 = 10

Q.no	Questions	Marks	CO
(a)	Discuss in detail about the Temporal Parameters of Real Time Workload in Real Time System.	10	1
(b)	How does dynamically changing the priority levels of tasks property affect Real time systems?	10	3

5. Attempt any *one* part of the following: 10*1 = 10

Q.no	Questions	Marks	CO
(a)	What are the distinguishing characteristics of Periodic and Aperiodic Real time tasks?	10	4
(b)	Explain about the Applications and Services under theConcurrency Controlin Real Time Operating Systems.	10	5

6. Attempt any *one* part of the following: 10*1 = 10

Q.no	Questions	Marks	CO
(a)	Describe the concept of Optimality of Effective-Deadline First (EDF) in Real Time Scheduling.	10	2
(b)	Discuss in detail about the Reference Models for Real Time Systems.	10	1

7. Attempt any *one* part of the following: 10*1 = 10

Q.no	Questions	Marks	CO
(a)	What is it required to synchronize the clocks in a Distributed Real time system? Compare the advantages and disadvantages of Centralized and the Distributed Clock Synchronization.	10	3
(b)	Describe the concept of Medium Access Control Protocols for Broadcast Networks in Real Time Communication.	10	4