Code No: 138EK

R16

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year II Semester Examinations, July - 2021
REAL-TIME SYSTEMS
(Common to CSE, IT)

Time: 3 Hours

Max. Marks: 75

Answer any Five Questions
All Questions Carry Equal Marks
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1. Elaborate the need of open( ) and create( ) system calls in Linux programming with an illustrative example. [15]

2. Define a Message queue. Describe a typical usage of message queue by illustrating various operations of it. [15]

3. a) Explain typical operations and uses of event register object with an illustrative example.
   b) Discuss various services supported by TCP/IP protocol stack. [7+8]

4. State the need of prioritizing exceptions. Illustrate the concept of ISR with relevant diagram. [15]

5. Explain the following with respect to Vx Works:
   a) Memory layout and memory management.
   b) Task states and Task priority levels. [7+8]

6. a) Discuss briefly on various commands used for disk management in UNIX.
   b) What are the macros used to examine the termination status returned by wait( ) and waitpid()? Explain. [7+8]

7. Explain how priority based scheduling work with an illustrative example in RTOS. [15]

8. a) Define conditional variable. State its importance.
   b) Give a detail description of conditional variable control block and explain various operations of it. [7+8]

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