

**R16**

**Code No: 138EK**

**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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