

**Code No: 154BR****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B.Tech II Year II Semester (Special) Examinations, January/February - 2021****OPERATING SYSTEMS****(Common to CSE, IT)****Time: 2 hours****Max. Marks: 75**

**Answer any five questions**  
**All questions carry equal marks**

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- 1.a) Mention the objectives and functions of Real-Time Embedded systems.
- b) Distinguish between client-server and peer-to-peer models of distributed systems. [7+8]
2. What is a System call? Explain the various types of system calls provided by an operating system. [15]
- 3.a) Describe the differences among long-term scheduling, short-term and medium term scheduling.
- b) Describe the actions taken by a thread library to context-switch between user level threads. [8+7]
4. Demonstrate Round Robin CPU scheduling algorithms with suitable example. [15]
5. Write about deadlock conditions and bankers algorithm in detail. [15]
- 6.a) How does the signal() operation associated with monitors differ from the corresponding operation defined for semaphores.
- b) Is it possible to have a deadlock involving only a single process? Explain. [8+7]
7. Consider the reference string: 7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0, 1 for a memory with three frames. Trace FIFO, optimal, and LRU page replacement algorithms. [15]
8. Explain File Free Space management approaches. [15]

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