**R09**

**Code No: F3202**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**
**MCA II Semester Examinations, August - 2017**
**OPERATING SYSTEMS**

Time: 3hrs                                                                      Max.Marks:60

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

1.a)   Define Batch operating system and time sharing operating system, giving the essential properties of each of them.
  b)   List and explain various layers of an operating system.                    [6+6]

2.a)   Distinguish between user mode and kernel mode of operations in operating systems.
  b)   List the difference between preemptive and non-preemptive scheduling.        [6+6]

3.a)   State the requirements that a solution to the critical section problem must satisfy.
  b)   What are the different principles which must be considered while selection of a scheduling algorithm?                                                        [6+6]

4.      Why should page replacement be performed? Compare FIFO, Optimal and LRU page replacement algorithms with an example.                                    [12]

5.a)   What is segmentation? How it differ from paging?
  b)   What is disk scheduling? Give SCAN disk scheduling algorithm.               [6+6]

6.      List and briefly discuss the most common schemes for defining the logical structure of a directory.                                                            [12]

7.      How does deadlock avoidance differ from deadlock prevention? Write about deadlock avoidance algorithm in detail.                                            [12]

8.a)   Why protection is required for a system? Explain the principles of protection.
  b)   Illustrate the design principles of UNIX system.                            [6+6]

**--ooOoo--**