**R17**

**Code No: 843AC**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**
**MCA III Semester Examinations, March/April - 2022**
**OPERATING SYSTEMS**

**Time: 3 Hours**                                                             **Max.Marks:75**

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

1.  Explain in detail about multiprogrammed, time-shared and real time systems in details.
    [15]

2.  Discuss about various process and file handling utilities.          [15]

3.  Find out average waiting time for given data using SJF and round robin (time quantum: 2units) scheduling algorithm:          [15]

| Process ID | Arrival time | Burst time |
|---|---|---|
| P01 | 0 | 5 |
| P02 | 2 | 3 |
| P03 | 4 | 2 |
| P04 | 5 | 6 |
| P05 | 6 | 4 |

4.  What is a deadlock? How can it be detected and recovered?          [15]

5.  How semaphores can be  for process synchronization     ?          [15]

6.  Explain IPC between processes on different systems using message queues and shared memory.          [15]

7.  Simulate page replacement algorithms on following reference strings:          [15]
    1,2,3,2,1,2,3,4,5,6,5,4,3,5

8.  Explain various file allocation and access methods.          [15]

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