Code No: 823AA **R13**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
MCA III Semester Examinations, June/July - 2018
OPERATING SYSTEMS

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

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

5 × 5 Marks = 25

1.a) Mention any two operating system calls. [5]
b) Differentiate preemptive scheduling with non-preemptive scheduling. [5]
c) Differentiate virtual memory with physical memory. [5]
d) Mention file access methods. [5]
e) Discuss goals of protection. [5]

PART - B

5 × 10 Marks = 50

2.a) Define an operating system. What is its purpose?
b) Explain the various functions of an operating system. [5+5]

OR

3.a) Explain the basic features of Real time operating systems.
b) Write the differences between the traps and interrupts. [5+5]

4. Explain process states with a neat diagram. [10]

OR

5.a) What is meant by critical section problem? Mention conditions for critical section.
b) Compare semaphores and monitors. [5+5]

6.a) Explain Paging with Segmentation?
b) What is page fault? Explain page fault service routine with a neat diagram. [5+5]

OR

7. Explain Page Replacement Algorithms with examples. [10]

8. Consider, an ordered disk queue with requests involving in tracks listed in the following order 98, 183, 37, 122, 14, 124, 65 and 67. Read -Write head is initially at track 53 and moving towards track 0. Find the total head movement for the following disk scheduling policies
a) FCFS b) SSTF c) SCAN d) C-SCAN [10]

OR

9. Explain various file access methods and directory structures. [10]

10.a) Enumerate the conditions that characterize a dead-lock?
b) Explain resource allocation (graph) algorithm for dead lock detection with relevant diagrams. [5+5]

OR

11. Explain Access control matrix in detail. [10]

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