Code No: 871AD

R20

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
MCA I Semester Examinations, July/August - 2021
OPERATING SYSTEMS

Time: 3 Hours   Max.Marks:75

Answer any five questions
All questions carry equal marks
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1.a)   Write in detail on time shared and real-time operating systems.
  b)   What is Operating system? Explain various services of operating system.   [7+8]

2.a)   What is CPU scheduling? Describe the difference among the short term scheduler, Medium term scheduler and Long term scheduler.
  b)   What is thread? Explain about user-level and kernel level threads.   [7+8]

3.a)   What is the difference between the processes and thread ?Explain about process and process control block.
  b)   What is dead lock? Explain about the dead lock prevention conditions.   [7+8]

4.   What is process Synchronization and critical section? Explain the Peterson solution on critical section problems.   [15]

5.   What is semaphore? How it is used in solving the critical section problems?   [15]

6.   Consider the following page reference string 7,0,1,2,0,3,0,4,2,3,0,3,2,1,2,0,1,7,0,1 How many page faults would occur for the following replacement algorithm assuming three frames?
      a) FIFO replacement   b) Optimal replacement.   [8+7]

7.a)   What is Virtual memory? Explain the demand paging and its performance.
  b)   Write detail on file allocation methods.   [7+8]

8.a)   Discuss about File system structure.
  b)   Explain about lseek, stat and ioctl system calls.   [7+8]

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