

Code No: 812AG

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**MCA II Semester Examinations, October/November - 2020****OPERATING SYSTEMS****Time: 2 Hours****Max. Marks: 60**

Answer any five questions
All questions carry equal marks

- 1.a) What is Operating system? Explain objectives and functions of OS. [12]
b) Explain Distributed Systems and Real-Time Systems?
- 2.a) What is system call? What system calls have to be executed by a command interpreter? What is the purpose of system calls? [12]
b) What is virtual machine? Explain the virtual machine and its implementation.
- 3.a) What is thread ? Explain about of user level threads and kernel level threads. [12]
b) Consider the following set process with the length of CPU burst and Arrival time given in milliseconds. Apply the R.R scheduling algorithm with time quantum 2m/sec and Find the Turnaround time of each processes and Average Waiting time.

Process No. s	CPU burst time	Arrival time
P1	10	0
P2	3	2
P3	15	3
P4	6	10
P5	5	13

4. What is semaphore? How it is used in solving the critical section problems? [12]
5. 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 which are initially empty. [12]
a) FIFO replacement b) Optimal replacement.
6. What is virtual memory? Explain the demand paging and its performance. [12]
7. Explain the following [12]
a) File system Access methods b) File system mounting.
- 8.a) Explain the language based Protection system with example. [12]
b) Write in detail about dead lock defection algorithm.

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