BANGALORE INSTITUTE OF TECHNOLOGY

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Affiliated to VTU, Belagavi, Karnataka, Recognized by AICTE, New Delhi, India

Department of CSE-Data Science

COURSE CODE: BCS303 SEM: 3 COURSE NAME: OS

DATE & TIME: 12.01.2024 Time: 1.30 PM to 2.30 PM MAX MARKS: 30

USN:

TEST-01

Answer one full question from each Module.

Q.NO	Module 1	Marks	CO'S	RBT
1 a)	Define operating system. Explain the services of operating system with neat diagram.	7	1	L2
b)	Distinguish between the following terms: i) Multi-processor systems and clustered systems. ii) Multi-programming and multitasking.	8	1	L2
2 a)	Explain the concept of virtual machine with neat diagram.	7	1	L2
b)	What are system calls? Briefly explain types of system call.	8	1	L1
	Module 2			
3 a)	What is Inter process communication? Explain message passing and shared memory concept of IPC in detail.	7	2	L2
b)	Explain the different multi-threading models.	3	2	L2
4 a)	Calculate the average waiting time and the average turnaround time by drawing the Gantt chart using FCFS, SRTF, RR(q=2ms) and priority(Preemptive) algorithms. Lower priority number represents higher priority.	8	2	L3
b)	Distinguish between process and threads.	2	2	L2

Process	Arrival Time	Burst Time	Priority
P1	0	9	3
P2	1	4	2
P3	2	9	1
P4	3	5	4

CO1 Explain the structure and functionality of operating system.

CO2 Apply appropriate CPU scheduling algorithms for the given problem.

Quiz

Total marks - 5

1. In Unix, Which system call creates the new process?
a) fork b) create c) new d) none of the mentioned

2. What is the ready state of a process?
a) when process is scheduled to run after some execution
b) when process is unable to run until some task has been completed
c) when process is using the CPU
d) none of the mentioned

3. What is interprocess communication?
a) communication within the process
b) communication between two process
c) communication between two threads of same process
d) none of the mentioned

4. The address of the next instruction to be executed by the current process is provided by the _____.
a) CPU registers b) Program counter c) Process stack d) Pipe

5. How many state are there in Process Life Cycle?

a) 4 b) 5 c) 6 d) 7

Course Coordinator Module Coordinator Programme Coordinator