

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-IV(NEW) – EXAMINATION – SUMMER 2019**

**Subject Code:2140702**

**Date:20/05/2019**

**Subject Name: Operating System**

**Time:02:30 PM TO 05:00 PM**

**Total Marks: 70**

**Instructions:**

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks**

Q-1	(A)	What is Operating System? explain any one types of operating system	3
	(B)	Explain different states of a process with a suitable diagram	4
	(C)	Explain the microkernel system architecture in detail.	7
Q-2	(A)	Explain the features of time sharing system	3
	(B)	Explain process model in brief.	4
	(C)	What is thread? Explain thread Structure? And explain any one type of thread in details.	7
<b>OR</b>			
	(C)	Explain Round Robin algorithm with proper example.	7
Q-3	(A)	Explain context switching.	3
	(B)	What it priority inversion problem in inter process communication? How to solve it?	4
	(C)	Explain SJF process scheduling algorithm with example	7
<b>OR</b>			
Q-3	(A)	Define the following term. 1) Critical Section 2) Waiting Time 3) Race condition	3
	(B)	Briefly describe SCAN	4
	(C)	How does a parent process create a child process? How does a parent process create an ordinary pipe (anonymous pipe) for communicating with child process? Write the steps.	7
Q-4	(A)	What are system calls? What is application programming interface?	3
	(B)	Which schedules algorithm result in starvation?	4
	(C)	Explain the use of Banker's algorithm for multiple resources for deadlock avoidance with illustration	7
<b>OR</b>			
Q-4	(A)	Which three are Page Replacement Algorithms? Discuss it in terms of page faults.	3
	(B)	What is I-node? Explain in detail.	4
	(C)	Which are the necessary conditions for Deadlock? Explain Deadlock recovery in brief.	7
Q-5	(A)	Write a Shell Script to find largest among the 3 given number.	3
	(B)	What is RAID? Explain in brief	4
	(C)	Explain the following commands in UNIX: suid, wall, man, finger, ls, cat, ps	7
<b>OR</b>			
Q-5	(A)	What is called segmentation? How it differs from paging?	3
	(B)	What is the access control list? Explain in brief.	4
	(C)	What is Paging? What is Page Table? Explain the conversion of Virtual Address to Physical Address in Paging with example.	7