

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**B.VOC- SEMESTER-I EXAMINATION – SUMMER 2025**

**Subject Code:21110204**

**Date:28-05-2025**

**Subject Name: Operating System**

**Time:02:30 PM TO 04:30 PM**

**Total Marks:50**

**Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

		<b>Marks</b>
<b>Q.1</b>	(a) Define Operating System. Explain the need of an operating system.	<b>05</b>
	(b) Differentiate Compiler and Interpreter.	<b>05</b>
<b>Q.2</b>	(a) Write a short note on SJF Scheduling Algorithms.	<b>05</b>
	(b) What is race condition? Explain mutual exclusion in brief.	<b>05</b>
<b>OR</b>		
	(b) Give the difference between Preemptive and Non-preemptive scheduling.	<b>05</b>
<b>Q.3</b>	(a) Explain Paging technique in memory management with diagrams.	<b>05</b>
	(b) A process references pages in the following order: 1, 2, 3, 4, 5, 3, 4, 1, 6, 7, 8, 7, 8, 9, 5, 4, 2, 4, 9 Use the FIFO and LRU algorithm to find out the number of page faults for this reference string using 3 page frames.	<b>05</b>
<b>OR</b>		
<b>Q.3</b>	(a) Explain the concept of virtual memory with examples.	<b>05</b>
	(b) Explain Optimal page replacement strategy using given example. 7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 3	<b>05</b>
<b>Q.4</b>	(a) Explain various file attributes and file operations in brief.	<b>05</b>
	(b) List and explain disk scheduling algorithms with examples.	<b>05</b>
<b>OR</b>		
<b>Q.4</b>	(a) Explain different types of file access methods.	<b>05</b>
	(b) Explain principles of I/O Hardware and Software.	<b>05</b>
<b>Q.5</b>	(a) State feature of any one interactive operating system.	<b>05</b>
	(b) Explain antivirus as the utility software.	<b>05</b>
<b>OR</b>		
<b>Q.5</b>	(a) List down the special features of mobile OS-Android.	<b>05</b>
	(b) Explain the process of “Disk cleanup” and “Disk Defragmenter” in brief.	<b>05</b>

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