

NATIONAL INSTITUTE OF TECHNOLOGY PATNA  
Department of Computer Science and Engineering  
Mid-Semester Examination (July-Dec 2022)

**Subject: Operating System (CS34111)**  
Full Marks: 30

**Course: B.Tech.**  
Duration: 2 Hrs

**Answer all questions**

No.	Questions	Marks	CO	BL
1	(a) Explain the goal of OS from the user's point of view and the system's point of view.	3	1	2
	(b) Differentiate between multiprogramming and multitasking.	3	1	4
	(c) What is Real-Time Operating System? What is the difference between Hard and Soft Real-Time OS?	4	1	1, 2
2	(a) Discuss various types of memory available in the computer system.	5	3	1
	(b) Justify the need for various types of memory.	5	3	2, 4
3	(a) Differentiate between program and process.	3	1	4
	(b) Explain process state transition with the help of a diagram.	7	1	2