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The Assam Royal Global University, Guwahati
Royal School of Information Technology (RSIT)
MCA/ MSc. IT 2nd Semester
Semester End Examination, June 2023
Course Title: Modern Operating System
Course Code: CAP054C202/INT054C203

Time: 3 Hours

Maximum Marks: 70

Note: Attempt all questions as per instructions given.
The figures in the right-hand margin indicate marks.

Section – A

1. Attempt **all** questions. (Maximum word limit 50) 2 x 8
- a. Which page replacement algorithm suffer from Belady's anomaly?
 - b. What will happen if the quantum time of round robin algorithm is very large?
 - c. What are the different states that a process can move from ready state?
 - d. Distinguish between process and thread.
 - e. Which CPU scheduling algorithms are free from starvation and why?
 - f. Differentiate between micro and macro kernel.
 - g. What is thrashing?
 - h. How is Bankers' algorithms related with Operating system?

Section – B

2. Attempt **any two** of the following: 6 x 2
- a. Identify the potential issues that could arise while running multiple programs on a single operating system and suggest solutions to mitigate these issues.
 - b. Suppose you are playing a very high responsive RPG (Role Playing Game) game in MOBA (Multiplayer online Battle arena) over internet. Which type of operating system you will choose to run your game and why?
 - c. If you are booting on your Linux operating system, which of the processes and hardware are associated with this booting procedure?
3. Attempt **any two** of the following: 7 x 2
- a. Process P1 to P5 have arrived at ready queue one after another and their burst time is 10,5, 20,8, 15 unit of time respectively. Which CPU scheduling algorithm will provide better execution of these processes?
 - b. Explain the role of a process control block in managing a process.
 - c. Compare and contrast between preemptive and non-preemptive scheduling algorithms with the help of an example.