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KIRIRI WOMEN'S UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2023/2024 ACADEMIC YEAR
SECOND YEAR, FIRST SEMESTER EXAMINATION
FOR THE BACHELOR OF SCIENCE IN COMPUTER SCIENCE
KCS 202 – INTRODUCTION TO OPERATING SYSTEMS

Date: 07TH December 2023

Time: 11:30AM – 1:30PM

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)

- Briefly explain the relationship between threads and processes. (4 Marks)
- Explain the key differences between Preemptive and Non-Preemptive Scheduling strategies. (6 Marks)
- Explain clearly main tasks that are performed by a kernel in operating system. (6 Marks)
- The OS performs the task of scheduling processes based on priorities using different algorithms. Explain any four of these algorithms of process scheduling. (8 Marks)
- Explain Three roles an operating system performs in any computer system. (3 Marks)
- State and explain the three strategies that can be used to remove a deadlock after its occurrence during resources processes. (3 Marks)

QUESTION TWO (20 MARKS)

- Analyze why round robin algorithm is considered better than first come first serve algorithm. (4 Marks)
- Explain four conditions that may cause a deadlock to arise during processes execution. (8 Marks)
- The classes of modern operating system may be classified by the nature of interaction that takes place between the computer and the user. State and explain any four classes of operating system you know (4 Marks)
- A threat is a program that is malicious in nature and leads to harmful effects for the system. Discuss some of these security threats in operating system and explain their protections respectfully. (4 Marks)

QUESTION THREE (20 MARKS)

- The operating system is responsible for different activities regarding to file system management and Explain any five of those activities. (4 Marks)
- Discuss different process states that changes as a process is being executed. (8 Marks)
- Describe the two models of inter-process communication as a component managed by an operating system. (8 Marks)

QUESTION FOUR (20 MARKS)

- Explain clearly main tasks that are performed by a kernel in operating system. (4 Marks)
- Explain four characteristics of first come first served scheduling algorithm. (8 Marks)
- The operating system is responsible for different activities in regard to file system management. Discuss (8 Marks)

QUESTION FIVE (20 MARKS)

- Describe how buffering can improve the performance of a computer system. (4 Marks)
- The operating system performs the task of scheduling processes based on priorities using different algorithms. Discuss any four types of these algorithms of process scheduling. (8 Marks)
- The OS performs the task of scheduling processes based on priorities using different algorithms. Explain any four of these algorithms of process scheduling. (8 Marks)