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**BCA-MCA Dual Degree (Semester 2<sup>nd</sup>)**  
**OPERATING SYSTEM**  
**Subject Code: BCMC210**  
**Paper ID: 18340110**

**Time: 03 Hours**

**Maximum Marks: 60**

**Instruction for candidates:**

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

**Section – A**

**(2 marks each)**

Q1. Attempt the following:

- a) Why is disk scheduling important?
- b) Write two advantages of LINUX operating system.
- c) Explain the term deadlock in brief.
- d) What is a scheduler?
- e) What do you mean by process synchronization?
- f) Differentiate between paging and segmentation.
- g) List the various File Attributes.
- h) Define critical section.
- i) Differentiate between External and Internal Fragmentation.

**Section – B**

**(5 marks each)**

- Q2. Explain with the help of examples FIFO and LRU, optimal page replacement algorithms with example reference string. Mention the merits and demerits of each of the above.
- Q3. Discuss the Simple Operating System Structure. Describe the layered approach.
- Q4. What are the various threats to security of a system? Elaborate in detail the different mechanisms of protection and security.
- Q5. Define Deadlock and how a deadlock can be prevented.
- Q6. What do you mean by a file system? Discuss the various file access methods in detail.

**Section – C**

**(10 marks each)**

- Q7. Explain any three Page Replacement algorithms with an example.
- Q8. Explain in detail the various Algorithms of Disk Scheduling with an example.
- Q9. Write short notes on
  - a. Process State Diagram
  - b. Inter process Communication