

**Master of Computer Applications**  
**MCAC403: Advanced Operating Systems**  
**Semester-IV**  
**Minor Exam-March, 2022**

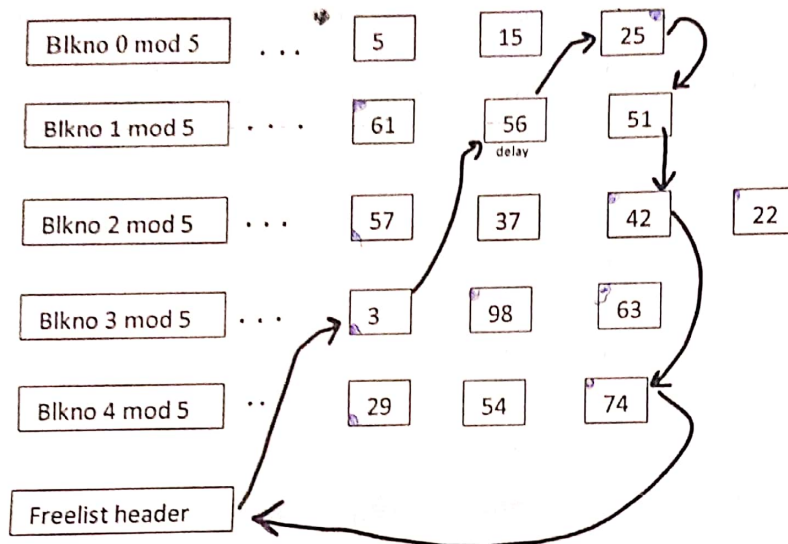
Max marks: 20

Max time: 1 Hour

Instruction: All questions are compulsory.

1. Consider the following buffer cache structure.

(5)



Explain the steps when kernel search for the block numbers:

- 18
  - 56
2. Assume that a disk block contains 1024 bytes. Find the block number and offset (2+3) in the file If a process wants to access byte offset
- 81,000 in a regular file.
  - 6,20,000 in a regular file.
3. What is the significance of super block while allocating a new inode. Also, write algorithm for assigning a new inode.
4. Explain the difference between dup and link system calls with their effects on the kernel data structures. Also, write a code snippet to explain the difference.

(5)

(5)