Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

MCADD-401

M.C.A. (Integrated), IV Semester

Examination, June 2022

Operating Systems

Time : Three Hours

Maximum Marks : 70

Note : i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) Compare Monolithic and Layered operating system.

   b) Describe features of Real time, Multi tasking and Multi threading operating system.

2. a) What is a process? Discuss components of process and various states of a process with the help of a process state transition diagram.

   b) List the advantage and disadvantage of writing an operating system in high level language as C.

3. a) A disk driver has 5000 cylinders from 0-4999. The drive is currently serving request at cylinder 143 and the previous request was at cylinder 125. The queue of pending request in FIFO order is 86, 1470, 913, 1774, 948, 1509, 1022, 1750, 130. Compute total head movements using following algorithm:

      i) FCFC

      ii) SCAN

   b) Explain the concept of demand paging in detail.

4. a) Describe fragmentation and its types. Also write the technique to minimize fragmentation.

   b) Consider the following page reference string:

   1, 2, 3, 4, 5, 3, 4, 1, 6, 7, 8, 7, 8, 9, 7, 8, 9.

   How many page faults would occur for the following replacement algorithms assuming five frames being made available

   i) FIFO

   ii) LRV

5. a) Explain the techniques.

   i) Virtual memory

   ii) Swapping

   b) Describe Belady's anomaly concept.

6. a) Differentiate between centralized and distributed operating system.

   b) Explain the UNIX operating system. What are salient features of UNIX operating system?

7. a) Describe the major activities of operating system with regard to file management.

   b) List the advantages of direct memory access.

8. a) Compare windows and unix operating system.

   b) Write brief note on following:

   i) Performance evaluation of O/S

   ii) Bottlenecks

******