



**DBZ-2040**

Seat No. \_\_\_\_\_

**M. C. A. (Sem. II) Examination**

**July - 2022**

**MCA-2040 : Operating Systems**

Time : **2.30** Hours]

[Total Marks : **70**

- 1 (a) Answer the following: 4
- (1) Processes use \_\_\_\_\_ system call to create processes that are a copy of themselves.
  - (2) \_\_\_\_\_ provides an interface that looks like independent hardware.
  - (3) UMA stands for \_\_\_\_\_.
  - (4) Peer - to - peer system is also known as a \_\_\_\_\_ system.
- (b) Answer any one in brief: 2
- (1) What is System Software?
  - (2) What is Operating System?
- (c) Answer any one in detail: 3
- (1) What is Hard Real - time Operating System?
  - (2) How System Call works?
- (d) Answer any one: 5
- (1) Explain functions of Operating System in detail.
  - (2) Write a short note on Distributed Operating System.
- 2 (a) Answer the following: 4
- (1) CT stands for \_\_\_\_\_.
  - (2) What is Burst Time?
  - (3) FCFS stands for \_\_\_\_\_.
  - (4) Full form of IPC.

- (b) Answer any one in brief: 2
- (1) What is Race Condition?
  - (2) What is Semaphores?
- (c) Answer any one in detail: 3
- (1) Explain Process Life Cycle.
  - (2) Difference between Process and Tread.
- (d) Answer any one: 5
- (1) Explain Shortest Job First Scheduling in detail.
  - (2) Write a note on Lottery Scheduling.
- 3** (a) Answer the following: 4
- (1) Full form of LRU.
  - (2) MMU stands for \_\_\_\_\_.
  - (3) Paging and Segmentation are example of \_\_\_\_\_ memory management scheme.
  - (4) What is Next - Fit algorithm?
- (b) Answer any one in brief: 2
- (1) What is Starvation?
  - (2) Define: Safe State.
- (c) Answer any one in detail: 3
- (1) How Resource Trajectories can be helpful in avoiding the deadlock?
  - (2) What is Segmentation with Paging?
- (d) Answer any one: 5
- (1) Explain Banker's Algorithm for Single Resource with example.
  - (2) What is Deadlock? Explain in detail.
- 4** (a) Answer the following: 4
- (1) What is Record?
  - (2) NTFS stands for \_\_\_\_\_.
  - (3) Full form of UFD.
  - (4) FCB stands for \_\_\_\_\_.

- (b) Answer any one in brief: 2
- (1) What is Bitmap?
  - (2) Define: Spooling.
- (c) Answer any one in detail: 3
- (1) What is Directory?
  - (2) Explain Hash Table.
- (d) Answer any one: 5
- (1) Explain Disk Scheduling algorithm in detail.
  - (2) What is I/O Interface? Explain with its characteristics.
- 5** (a) Answer the following: 4
- (1) ACL stands for \_\_\_\_\_.
  - (2) MitM stands for \_\_\_\_\_.
  - (3) What is Active Attack?
  - (4) Define: Misfeasors.
- (b) Answer any one in brief: 2
- (1) What is Tunneling?
  - (2) What is System Threats?
- (c) Answer any one in detail: 3
- (1) Explain Reader and Writers problem.
  - (2) Difference between Protection and Security.
- (d) Answer any one: 5
- (1) Explain Dining Philosophers Problem in detail.
  - (2) Write a short note on Sleeping and Barber Problem in detail.
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