

Roll No. ....

Total Pages : 3

MCA/M-15

10315

**OPERATING SYSTEM**

Paper-CS-DE-15

Time Allowed : 3 Hours]

[Maximum Marks : 80

**Note** : Attempt **five** questions in all, selecting at least **one** question from each Unit. Question No. 1 is compulsory. All questions carry equal marks.

**Compulsory Question**

1. Explain the following :

(a) Discuss Internal and External Fragmentation.

(b) Explain the various operations that can be performed on a file.

(c) Briefly explain the anatomy of Windows.

(d) Explain revocation of Access rights.

(e) How can a file be created using cat command in Linux? Give example.

(f) Explain Deadlock detection and recovery.

(g) Explain various types of Scheduler used in Process Scheduling.

(h) What is Race condition? How can it be avoided?

8×2=16

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UNIT-I

- 2. What is an Operating System? Explain the functioning of Operating System as a Resource Manager? List the services provided by operating system. Explain how each provides convenience to the users. 16
- 3. What do you understand by Process Scheduling? What are various parameters considered in scheduling of processes? Explain in detail various CPU scheduling algorithms with suitable example. 16

UNIT-II

- 4. What is Deadlock? What are the necessary conditions for a deadlock to occur? Write Banker's Algorithm to avoid a deadlock and explain with an example. 16
- 5. Explain in detail Demand Paging. Discuss the segmentation with paging techniques for mapping the virtual address to physical address. 16

UNIT-III

- 6. (a) Write a note on various file access methods with neat sketch. Discuss the different file allocation methods with suitable example. 8
- (b) Discuss briefly about Directory Structure and its types available. Also explain the file protection mechanism in a file system. 8
- 7. (a) What do you understand by Disk Scheduling? Explain in detail various policies used for Disk Scheduling. 10
- (b) Explain Access Matrix and its implementation. 6

UNIT-IV

- 8. (a) What is Windows Explorer? Discuss the features of Windows Operating System. 8
- (b) What is the role of the following in the Windows Environment?
  - (i) File Manager
  - (ii) Program Manager
  - (iii) Accessories
  - (iv) Paint Brush.
- 9. (a) Explain in detail the Linux Architecture. Also explain Linux file system. 8
- (b) Explain the following commands with example.
  - (i) chmod
  - (ii) sort
  - (iii) cut
  - (iv) grep
  - (v) dd
  - (vi) nohup
  - (vii) batch
  - (viii) crontab.