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Printed Pages: 2

19034

**BCA/M-15**

**OPERATING SYSTEM ORGANIZATION AND**

**UNIX**

**Paper-BCA-302**

**Time allowed: 3 hours]**

**[Maximum marks: 80**

Note: Attempt **five** questions in all, selecting at least **one** question from each unit.  
All questions carry equal marks.

**UNIT-I**

1. (a) Operating system acts as a Resource Manager? Explain in Detail.  
(b) Difference system call and system program. Explain various types of system calls.
2. (a) What is Process Control Block? What information is contained in PCB.  
(b) What is multiprogramming? How multiprogramming ensures effective utilization of Main memory and CPU.
3. Explain the following CPU scheduling algorithms:
  - (a) FCFS
  - (b) SJF
  - (c) Priority scheduling
  - (d) Round robin scheduling

**UNIT-II**

4. What is segmentation? Explain the concept of segmentation. Write the advantages and disadvantages of this technique.
5. What is Page replacement? Explain various page replacement algorithms with suitable examples.

**UNIT-III**

6. Explain various Disk scheduling algorithms with suitable examples.
7. Explain various types of Directory structures with suitable examples. Write advantages and disadvantages of each structure.
8. Write short notes on the followings:
  - (a) I/O controllers
  - (b) Interrupt handlers
  - (c) Distributed file systems
  - (d) File sharing

#### **UNIT-IV**

9. Define Deadlock? What are the necessary conditions for deadlock? Explain various deadlock handling techniques.
10. Write short notes on the following:
  - (a) Concurrent Processes
  - (b) IPC
  - (c) Bernstein condition