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Total Pages : 3

**301403**

**May, 2019**

**B. TECH(CE/IT/CSE) - 4th semester  
Operating System (PCC-CS-403)**

Time : 3 Hours]

[Max. Marks : 75

*Instructions :*

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

**PART-A**

1. (a) Explain context switching. (1.5)
- (b) Briefly explain the necessary conditions for Deadlock to occur. (1.5)
- (c) Explain briefly External fragmentation and its solution. (1.5)
- (d) Briefly explain the file operations. (1.5)
- (e) Differentiate Paging and Segmentation. (1.5)
- (f) Differentiate between Pre-emptive and Non-preemptive scheduling. (1.5)

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- (g) Differentiate between multitasking and multi-programming. (1.5)
  - (h) Define batch processing. (1.5)
  - (i) Explain CPU and I/O Burst cycle with suitable diagram. (1.5)
  - (j) State and explain operations on processes. (1.5)

### PART-B

2. (a) What is meant by CPU scheduling? Explain different scheduling algorithms with examples. (10)
- (b) Solve the following problem by using following scheduling algorithms

Process	Burst Time
1	27
2	6
3	3

- (i) FCFS
  - (ii) SJF
  - (iii) Round Robin. (5)
3. (a) Define Scheduler. Compare between long term and short-term scheduler. (5)
- (b) Differentiate between the following terms :
- (i) Contiguous and Linked allocation.
  - (ii) Linked and Indexed allocation. (10)

4. There are 200 cylinders numbered from 0-199 the disk head starts at number 100. Find

23, 89, 132, 42, 187

- (i) C-Scan
- (ii) FCFS
- (iii) SSTF
- (iv) LOOK
- (v) C-LOOK. (15)

5. (a) What is the cause of thrashing? Discuss the page replacement algorithms. (5)

(b) What are the different methods for handling Deadlocks? Explain Deadlock prevention and Deadlock avoidance. (10)

6. (a) Explain file system structure and its allocations methods. (7½)

(b) Explain with the help of necessary diagrams the File System and Directory implementation. (7½)

7. (a) Explain techniques of device management. Compare shared and virtual device.

(b) Explain general model of file system. Compare logical file system and physical file system. (15)