

7. (a) Explain the function required by operating system while executing device management. Discuss various I/O modes for handling I/O devices. [9]
- (b) Write a note on disk-scheduling. [6]

#### UNIT-IV

8. Define file. How it is different from directory? Write different functions of OS related to file management. Discuss various attributes related to files along with various file organization scheme. [15]
9. (a) Describe the on disk on structure and In memory structure used for implementation of files. Also give different directory structure used for storing files. [9]
- (b) Differentiate between Physical and logical file system. [6]

----- X -----

## Question Paper Code : 6492

BCA (Semester-IV) Examination, 2018

(New Syllabus)

### OPERATING SYSTEM

[Second Paper]

[BCA-S-207]

Time : Three Hours]

[Maximum Marks : 100

**Note :** Answer five questions in all. Question no. 1 is compulsory. Besides this, attempt one question from each Unit.

1. Answer the following in brief: [4x10=40]
- (a) Explain critical section problem with its basic requirements.
- (b) Define Thread and Daemon.
- (c) Discuss the utility of multi programmed batch system. Also give its disadvantages.
- (d) Describe the commonly used file access methods.

- (e) Explain the operating system function related to main memory management.
- (f) Write the performance criterion for process scheduling algorithm.
- (g) Elaborate the concept of demand paging with reference to virtual memory in operating system.
- (h) Discuss the purpose and utility of semaphore after defining it.
- (i) Discuss the concept of virtual memory.
- (j) Explain the necessary and sufficient conditions for deadlock.

**UNIT-I**

2. List different functions performed by operating system. Elaborate any four such functions by giving proper justification advantages and disadvantages of each. [15]
3. (a) What do you mean by paging ? How address mapping is performed in paging technique ? Also enumerate the advantage and disadvantage of paging. [10]
- (b) Explain the utility of segmentation in modern operating system. [5]

6492/800

( 2 )

4. (a) Discuss the concept of process, its states and process control block. Explain with diagram and its content. [10]

**UNIT-II**

- (b) Define the term process synchronisation. [5]
5. Consider the following job table : [15]

Job	Arrival time (ms)	Next CPU Burst (ms)
J <sub>1</sub>	0	4
J <sub>2</sub>	2	5
J <sub>3</sub>	5	6
J <sub>4</sub>	6	2

Given time slice = 1 ms. Compute average Turnaround time and waiting time of processes for FCFS, SRTN and Round Robin Algorithm. Compare each.

**UNIT-III**

6. (a) By giving example, discuss how deadlock occurs. Discuss the methods how to detect a deadlock. Explain the utility of RAG and PWFPG in this context. [9]
- (b) Explain deadlock prevention methods. [6]

6492/800

( 3 )

[P.T.O.]