

INTEGRATED M.C.A. SEM-VII (CBCS - 2014 COURSE): SUMMER-2022
SUBJECT: OPERATING SYSTEM CONCEPTS

Day: Wednesday
Date: 08-06-2022 S-10084-2022

Time: 10:00AM TO 1:00
Max. Marks: 100 P.M.

N. B.

- 1) Answer any **FOUR** questions from section – I and any **TWO** questions from section-II
- 2) Both the section should be written in the **SEPARATE** answer book.
- 3) Figures to the right indicate **FULL** marks.

SECTION-I

- Q.1** a) What is Batch control language? Explain functioning of batch operating system. (10)
b) Differentiate between Real time operating systems and online operating systems. (05)
- Q.2** a) What is multiple level queues with feedback scheduling? How it differs from multiple level queue scheduling. (10)
b) "Operating system acts as a resource manager." Justify. (05)
- Q.3** a) What is segmentation? Give the advantages of segmentation over paging system. (10)
b) Differentiate between memory management with linked list and memory management with bit map. (05)
- Q.4** What is semaphore? Explain busy-wait implementation of semaphore. Give the characteristics of it. (15)
- Q.5** a) Explain DMA transfer in detail. (10)
b) Discuss the role of device controller in brief. (05)
- Q.6** What is deadlock? Explain various strategies to deal with deadlock. (15)
- Q.7** Write short notes on any **TWO** of the following: (15)
a) Reusable resources
b) Directories
c) Monitors

SECTION-II

- Q.8** Assume job arrived as indicated below. (20)

Processes	Arrival Time (am)	Run Time (min)
P1	10.00	7
P2	10.03	2
P3	10.04	3
P4	10.09	2

Find average waiting and average turnaround time in case of :

- a) FIFO b) SJF c) SRTN

- Q.9** Consider the following page reference string. (20)
0, 3, 2, 1, 3, 1, 0, 2, 3, 1, 0, 3, 2, 3, 1, 0.
Explain the algorithm and find the page to be replaced at the end using LRU with matrix.
- Q.10** Consider the Hard disk with 150 tracks, numbered 0 to 149 and is currently serving a request at track 14 and moving outside. If the queue of requests is kept in the FIFO order (20)
86, 147, 19, 77, 94, 104, 100, 17, 130, 125, 70, 135
What are total head movement to satisfy this request for the following disk scheduling algorithms?
i)FCFS ii)SSTF

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