S.D.E.

M.C.A. Sem – II (CBCS - 2018 Course) : SUMMER - 2019

SUBJECT – OPERATING SYSTEMS

Day: Friday
Date 03/05/2019

S-2019-5246

Time : **02.00 P.M. TO 05.00 P.M.**
Max. Marks : 70

N.B.:

1) Attempt **ANY FOUR** questions from **Section - I** and **ANY TWO** questions from **Section – II.**
2) Figures to the right indicate **FULL** marks.
3) Answers should be written in **SAME** answer book.

SECTION - I

Q.1 Explain various operating system structures with their merits and demerits. **(10)**

Q.2 What do you mean by process relationships? Describe various relationships that exist among processes. **(10)**

Q.3 Discuss the concept of virtual memory in detail. **(10)**

Q.4 What are semaphores? Describe busy-wait implementation of semaphore. **(10)**

Q.5 Explain DMA transfer in detail. **(10)**

Q.6 Write short note on **ANY TWO** of the following : **(10)**

a) Access control lists.
b) Second chance page replacement algorithms.
c) Directories

SECTION - II

Q.7 Consider the disk with 100 tracks, numbered 0 to 99. Currently head is serving a request at track number 57 and moving inside. Following is the queue of requests kept in the FIFO order: **(15)**
87, 14, 39, 79, 94, 15,48, 21, 46, 94, 75, 45, 69
Calculate total head movement to satisfy above requests for the following disk scheduling algorithms.
i. FCFS ii. SSTF

Q.8 Consider the following case. **(15)**

Process	In time (am)	Run time (min.)
P1	10.00	10
P2	10.04	7
P3	10.07	6
P4	10.12	3

Calculate average waiting and turnaround time in case of :
i. FCFS ii. SJF iii. SRTN

Q.9 Explain the terms: **(15)**

a) Device drivers
b) User authentication
c) Monitors

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