E–3923

B. C. A. (Part III) EXAMINATION, 2021

(Old Course)

Paper Fifth

COMPUTER OPERATING SYSTEM

(303)

Time : Three Hours]   [*Maximum Marks : 100*

[*Minimum Pass Marks : 40*

Note : Attempt any *two* Parts from each Unit. All questions carry equal marks.

Unit—I

1. (a) What is operating system ? Explain batch processing and spooling.

    (b) Explain the time sharing and real time systems in detail.

    (c) Write short notes on the following :

    (i)   Multiprocessor system

    (ii) Fundamental service of operating system

Unit—II

2. (a) What is schedulers ? Explain different type of scheduler used in operating system.

   (b) Consider the following set of processes with the length of CPU burst time given in milliseconds and arrived in 0 second.

Process	Burst Time
P_1	10
P_2	3
P_3	4
P_4	3
P_5	7

   Illustrate the execution of these processes using SJF, FCFS and round robin (time slice = 1 ms) and find average waiting time of each algorithm.

   (c) Explain the performance criteria of CPU scheduling algorithm.

Unit—III

3. (a) Consider the following page reference string :

   1, 2, 3, 4, 2, 1, 5, 6, 2, 1, 2, 3, 7, 6, 5, 4, 1, 6

How many page faults occur for the following page replacement algorithm for 3 frame :

(i)   LRU

(ii) FIFO

(b) What do you understand by memory partition ? Explain MFT and MVT.

(c) Explain any *two* disk scheduling algorithms.

Unit—IV

4. (a) Explain various file allocation methods.

(b) Explain basic file system and physical file system.

(c) Write short notes on the following :

(i)   File support device directory

(ii) Symbolic file system

Unit—V

5. (a) What is Deadlock ? Explain resource allocation graph.

(b) Describe hold and wait, no preemption and circular wait in brief.

(c) Explain deadlock avoidence-banker algorithm with example.

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