7236

BOARD DIPLOMA EXAMINATION, (C-20)

MAY—2023

DCME - THIRD SEMESTER EXAMINATION

OPERATING SYSTEMS

Time : 3 hours]   [*Total Marks* : 80

PART—A   3×10=30

Instructions : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. What is spooling?

2. Define system call with an example.

3. List the advantages of Round Robin scheduling.

4. Write any three difference between process and thread.

5. Define deadlock.

6. List the inter-process communication methods.

7. What is address binding?

8. What is thrashing?

9. Define the terms latency time and transfer rate.

10. List various directory structures.

Instructions : (1) Answer **all** questions.

(2) Each question carries **eight** marks.

(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. *(a)* Differentiate between multiprogramming and timesharing.

(OR)

(b) Explain about operating system services.

12. *(a)* Explain SJF scheduling algorithm with an example.

(OR)

(b) Explain multilevel scheduling.

13. *(a)* Explain deadlock avoidance with an example using Banker's algorithm.

(OR)

(b) Explain about deadlock recovery.

14. *(a)* Explain LRU page replacement algorithm with an example.

(OR)

(b) Explain about demand paging.

15. *(a)* Consider a disk system with 100 cylinders. The requests to access the cylinders occur in the following sequence :

4, 34, 10, 7, 19, 73, 2, 15, 6, 20

Assuming that the head is currently at cylinder 50, what is the time taken to satisfy all requests if it takes 1 ms to move from one cylinder to adjacent one and shortest seek time first policy is used.

(OR)

(b) List and explain various file allocation methods.

Instructions : (1) Answer the following question.

(2) The question carries **ten** marks.

(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

16. Write about semaphore. If a counting semaphore S is initialized to 10, then 6 P operations and 4 V operations are performed on S. What is the final value of S?

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