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BOARD DIPLOMA EXAMINATION, (C-20)
OCTOBER/NOVEMBER—2023
DCAI – FOURTH 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 multiprocessor system?

2. List operating system services.

3. Differentiate between process and thread.

4. What is a monitor?

5. What is CPU scheduling?

6. State the necessary conditions for deadlock.

7. What is swapping?

8. List the advantages of LRU page replacement algorithm.

9. List various file access methods.

10. Define disk structure.

PART—B

8×5=40

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 single user and multiuser operating system structure.

12. *(a)* Explain about Process Control Block.

(OR)

(b) Explain algorithms scheduling.

13. *(a)* Explain about Inter Process Communication.

(OR)

(b) Explain about deadlock recovery.

14. *(a)* Explain about multiple partition allocation.

(OR)

(b) Discuss in detail about paging concept.

15. *(a)* Consider a disk system with 100 cylinders. The request to access the cylinders occurs 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 when shortest seek time first policy is used?

(OR)

(b) Explain about disk organization and structure.

2 *[Contd...*

PART—C

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. If there are 6 units of resource R in the system and each process in the system requires 2 units of resource R, then how many processes can be present at maximum so that no deadlock will occur?

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