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Third Semester B.C.A. Degree Examination, August/September 2021

(CBCS Scheme)

Computer Science

Paper VI – OPERATING SYSTEM

Time : 3 Hours]

[Max. Marks : 100

Instructions to Candidates : Answer all Sections.

SECTION – A

I. Answer any **TEN** of the following. Each question carries **2** marks: **(10 × 2 = 20)**

1. Define Operating System. List the different types of operating system.
2. What is a Spooling?
3. Define the terms Waiting time and Turn-around time.
4. What is race condition?
5. What is monitor?
6. Mention the methods used to handle deadlocks.
7. What are base and limit registers?
8. What is compaction?
9. What is pure demand paging?
10. Define Seek time.
11. List any four attributes of file.
12. Differentiate between policy and mechanism.

SECTION – B

II. Answer any **FIVE** of the following. Each question carries **5** marks: **(5 × 5 = 25)**

13. What are the main objectives of an operating system? Explain.
14. What is Semaphore? Explain different types of Semaphore.

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15. Explain the Resource – Allocation graph.
16. What is fragmentation? Explain briefly about external fragmentation.
17. Explain LRU page replacement algorithm with an example.
18. Write short notes on segmentation.
19. Write a note on file protection and security.
20. What is a virus? Explain different types of viruses.

SECTION – C

III. Answer any **THREE** of the following. Each question carries **15** marks : **(3 × 15 = 45)**

21. Explain types of operating system. Mention its advantages. **(15)**
22. (a) Explain Banker's Algorithm. **(8)**
(b) Explain Dining – Philosophers Problem. **(7)**
23. (a) Differentiate between Paging and Segmentation. **(8)**
(b) What is Belady's Anomaly? Explain with an example. **(7)**
24. (a) Explain single level and two level directory. **(8)**
(b) Write a note on Swap Space Management. **(7)**
25. (a) Explain different types of program threats. **(8)**
(b) Write short notes on levels of security. **(7)**

SECTION – D

IV. Answer any **ONE** question : **(1 × 10 = 10)**

26. Explain any two file allocation methods with neat diagram. **(10)**
27. Write short notes on:
 - (a) Process Control Block (PCB) **(5)**
 - (b) Process States **(5)**