514444

DCCS401

Reg. No. | | | | | | | | |

IV Semester B.A./B.Sc. Degree Examination, September - 2023

COMPUTER SCIENCE

Operating System

(NEP Scheme)

Time : 2½ Hours **Maximum Marks : 60**

Instructions to Candidates:

Answer all sections.

SECTION - A

I. Answer any **Four** questions. Each question carries **Two** marks. **(4×2=8)**

1. Define operating system with two examples.
2. Define system call. Give two examples of system call.
3. What is process synchronization?
4. Define semaphore.
5. What is fragmentation? Mention its types.
6. What do you mean by principle of least Privilege with respect to protection?

SECTION - B

II. Answer any **Four** questions. Each question carries **Five** marks. **(4×5=20)**

7. What is a process? Explain process state diagram.
8. Write a short note on thread.
9. What is a scheduler? Explain the different types of schedulers.
10. What is critical section? What are the requirements of critical section?
11. Write a note on segmentation.
12. Explain Peterson's solution.

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SECTION - C

III. Answer any **Four** questions. Each question carries **Eight** marks. **(4×8=32)**

13. a. Write a note on Interprocess communication. **(4)**

    b. What is a PCB? Explain. **(4)**

14. Explain the operating system services. **(8)**

15. Consider the following set of process with CPU burst time and priority. **(8)**

Process - id	Burst - time	Priority
P1	10	3
P2	1	1
P3	2	4
P4	1	5
P5	5	2

    Draw the Gantt chart and find the average waiting time using priority scheduling and first come first served.

16. Write a note on :

    a. Resource Allocation Graph (RAG). **(4)**

    b. Address binding. **(4)**

17. What is a reference string? Explain any one page replacement Algorithm. **(8)**

18. Write a note on :

    a. Access matrix in protection. **(4)**

    b. Types of network based operating system. **(4)**
