III Semester B.C.A. Degree Examination, February/March 2024
(NEP) (F+R)
COMPUTER SCIENCE
Operating System

Time : 2½ Hours   Max. Marks : 60

Instruction : *Answer any four questions from each Section.*

SECTION – A

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

1. Mention any 4 goals of operating system.

2. Define Kernel and Shell.

3. List the states of process.

4. What is Race condition in O.S. ?

5. What is swapping ?

6. What is seek and transfer time ?

SECTION – B

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

7. What is system call ? Explain the working of system call with a diagram.

8. Define thread. Explain multi-threaded programming.

9. What is a semaphore ? Explain its types.

10. Define deadlock. Explain necessary conditions for deadlocks.

11. Explain contiguous memory allocation techniques.

12. Explain file allocation methods.

SECTION – C

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

13. a) Explain any 4 functions of O.S.   4
    b) Define booting and explain its types.   4

14. a) Discuss process control block.   4
    b) Explain critical section problem in O.S.   4

15. a) Explain the following CPU scheduling algorithms.   4
       1) FCFS   2) Priority scheduling
    b) Write a note on Banker's algorithm.   4

16. a) What is SJF ? Using SJF scheduling draw Gantt Chart and calculate
       average waiting time for the following   4

Process	Burst time	Waiting time
P_1	6	3
P_2	8	16
P_3	7	9
P_4	3	0

    b) Explain Demand paging.   4

17. a) Explain any two disk scheduling algorithms.   4
    b) Write a short note on File Access methods.   4

18. a) What is paging ? Write the advantages and disadvantages of paging.   4
    b) Write short notes on LINUX system.   4

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