



NP – 395

21
III Semester B.C.A. Degree Examination, February/March 2024
(NEP) (F+R)
COMPUTER SCIENCE
Operating System

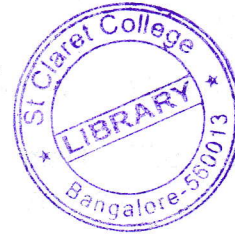
Time : 2½ Hours

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.

P.T.O.



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