



NP – 316

III Semester B.C.A. Degree Examination, March/April 2023
(NEP Scheme)
(Freshers) (2022 – 23 and Onwards)
COMPUTER SCIENCE
Operating Systems



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. What is operating system ? Mention any two functions of OS.
2. Mention the components of OS.
3. What is deadlock ? Give an example.
4. Define page fault and fragmentation.
5. Mention the various types of files.
6. What is disk formatting ?

SECTION – B

Answer **any 4** questions. **Each** question carries **5** marks.

(4×5=20)

7. Explain different states of a process with neat diagram.
8. Explain critical section problem.
9. What is Semaphore ? Explain different types of Semaphores.
10. Explain first fit, best fit and worst fit allocation of memory.
11. Explain various file accessing methods.
12. Explain the disk structure.

SECTION – C

Answer **any 4** questions. **Each** question carries **8** marks.

(4×8=32)

13. a) Explain real time and time sharing operating system.
b) Write a note on PCB.
14. a) What is system call ? Explain its types.
b) Discuss the deadlock prevention and avoidance.

(4+4)

(4+4)

P.T.O.



15. Consider the following set of process with CPU burst time in MS.

| Process | CPU Burst time |
|----------------|----------------|
| P ₁ | 5 |
| P ₂ | 10 |
| P ₃ | 6 |
| P ₄ | 2 |

Draw the Gantt Chart, find average waiting time and turn around time using

i) FCFS

ii) SJF.

8

16. a) Explain different fragmentation.

b) Write a short notes on demand paging.

(4+4)

17. a) Explain File protection.

b) Describe the different directory structures.

(4+4)

18. Explain different disk scheduling algorithms with suitable example.

8
