NP – 316

27

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.   (4+4)

14. a) What is system call ? Explain its types.
    b) Discuss the deadlock prevention and avoidance.   (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 arround 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**

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