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 #428 582001.

SECTION - A

Answer any 4 questions. Each question carries 2 marks.

 $(4 \times 2 = 8)$

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

SECTION - B

Answer any 4 questions. Each question carries 5 marks.

 $(4 \times 5 = 20)$

- 7. Explain different states of a process with neat diagram.
- Explain critical section problem.
- 9. What is Semaphore? Explain different types of Semaphores.
- 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. (4x8=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)

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NP-316



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

Process	CPU Burst time
Ρ,	5
P ₂	10
P ₃	6
P.	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.

(474)
