

A-1297

Total Pages : 4

Roll No.

BCA(N)-102

(Operating System)

2nd Semester Examination, Session December 2024

Time : 2:00 Hrs.

Max. Marks : 70

Note :- This paper is of Seventy (70) marks divided into Two (02) Sections 'A' and 'B'. Attempt the questions contained in these Sections according to the detailed instructions given therein. *Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.*

Section-A

(Long Answer Type Questions) 2×19=38

Note :- Section 'A' contains Five (05) Long-answer type questions of Nineteen (19) marks each. Learners are required to answer any two (02) questions only.

1. Define Linux. How is it different from other operating systems ? What is the difference between hard links and soft links in Linux ?
2. Distinguish between the following term :
 - (a) Multiprogramming Vs. Multitasking
 - (b) Process and Control Block (PCB) Vs. Semaphores.
 - (c) Direct Memory Access and Indirect Memory Access.
3. Explain the role of a page table in virtual memory. How does a multi-level page table help reduce memory usage ?
4. Explain Long, Medium, short- term scheduling with respect to :
 - (a) Event handling and scheduling.
 - (b) Batch processing, Multiprogramming and Time sharing systems.
5. Answer the following :
 - (a) What is context switching ? Describe its role in multitasking ?
 - (b) Explain paging and segmentation. Highlight the differences ?

Section-B

(Short Answer Type Questions) 4×8=32

Note :- Section 'B' contains Eight (08) Short-answer type questions of Eight (08) marks each. Learners are required to answer any *four* (04) questions only.

1. What is the difference between preemptive and non-preemptive scheduling ?
2. Define in detail about the following terms :
 - (i) Direct memory access (DMA)
 - (ii) Disk scheduling
3. What are the different types of scheduling algorithms ? Compare FCFS and Round Robin.
4. Explain the concept of buffering and spooling in I/O management.
5. Explain in detail the following :
 - (a) Preemption
 - (b) Scheduling
 - (c) Dispatching
 - (d) System performance

6. Define an. operating system. What are its main functions ?
7. Discuss the importance of thrashing in operating systems. How does the working set model help prevent it ?
8. Explain the four necessary conditions for deadlock with real-life examples, also define methods to prevent and recover from deadlocks ?
