K–324

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BCA–10

Bachelor of Computer Application B.C.A. IIIrd Semester Examination Dec., 2023

OPERATING SYSTEM

Time : 2 Hours] [**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 there in. ***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 deadlock. Mention the necessary four conditions which ensures occurrence of deadlock.
2. What are Semaphores ? What are their types ? Show how semaphores may be used for process synchronization.
3. What are different types of multiprocessor operating systems ? Explain any two multiprocess OS in brief.
4. Explain the concept of virtual memory system.
5. Explain the various CPU scheduling algorithm with example.

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 operating system ? What are functions of operating system ?
2. What is the difference between process and thread ?
3. What do you understand by race-condition ? Give few examples of arising of race-condition in concurrent processing.

4. Define the difference between preemptive and non-preemptive scheduling.

5. Define the following terms :

   (i) Remote procedure call

   (ii) DMA

6. What is distributed operating system ? What are the advantages of distributed operating system ?

7. Differentiate between sequential and random access file.

8. Write short notes on the following :

   (i) Cryptography

   (ii) Inter process communication

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