10. Explain the concept on deadlock in an operating system and discuss the necessary conditions for deadlock to occur. Also, describe the methods for handling deadlock.

11. Write short notes on the following :

(a) Demand Paging

(b) Page Segmentation

12. Why Memory Management is necessary in Operating System ? Given memory partitions/holes of 100KB, 500KB, 200KB, 30KB and 600KB. Processes request for allocation of memory space of 112KB, 317KB, 112KB, and 380KB in order. Show how the memory will be allocated to different process using first fit, best fit and worst fit algorithms ?

13. Write short note on the following :

(a) Denial of Service

(b) Logic Bomb

(c) Trojan Horse

(d) Worm

BCA–07/DCA–102

Decebmer – Examination 2023

BCA (IInd Year)/DCA Examination
Operating System–I
Paper : BCA-07/DCA-102

Time : 3 Hours]   [*Maximum Marks : 70*

Note :– The question paper is divided into three Sections A, B and C. Write answers as per the given instructions.

Section–A   2×7=14

(Very Short Answer Type Questions)

Note :– Answer all questions. As per the nature of the question delimit your answer in one word, one sentence or maximum up to **30** words. Each question carries 2 marks.

1. (i) What do you mean by Overlaying ?

(ii) Name any *two* Scheduling algorithms.

(iii) Explain the key principles of Security.

(iv) What is Spooling ?

(v) What do you mean by *Race Condition* ? Give an example.

(vi) What do you mean by Sockets ? Give an example.

(vii) What are CPU Bound and I/O Bound Jobs ?

Section–B 4×7=28

(Short Answer Type Questions)

Note :– Answer any *four* questions. Each answer should not exceed **200** words. Each question carries 7 marks.

2. Explain the concept of logical vs. physical addressing and address translation in memory management.

3. What do you mean by Process Control Block (PCB) ? Also explain the content of PCB.

4. What is a Monitor ? Explain the differences between Monitors and Semaphores with suitable examples.

5. Explain Process Synchronization. How is it different from data Synchronization ?

6. What is a domain ? What are access hierarchies and protection rings.

7. What is Thread ? Explain the lifecycle of a Thread with suitable examples.

8. What are the key principles of security ? What are two advantages of encrypting data stored in the computer system ?

9. Discuss the following with proper illustration :

(a) Peer-to-Peer computing environment

(b) Client-Server Computing

Section–C 2×14=28

(Long Answer Type Questions)

Note :– Answer any *two* questions. You have to delimit your each answer maximum up to **500** words. Each question carries 14 marks.