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NBCA/M-24

BCA

(Concept of Operating Systems)

Paper–B23-CAP/CTS/CAL/CDS

(CC-C2)

Time : Three Hours] [Maximum Marks : 50

Note : Question No. 1 is compulsory. In addition attempt *four* more questions, selecting *one* question from each unit. All questions carry equal marks.

Compulsory Question

1. Attempt all the followings :

(a) Process Control Block.

(b) Deadlock Avoidance.

(c) Thrashing.

(d) Real time processing.

(e) Swapping. (5×2=10)

UNIT–I

2. What is an Operating System? Explain the role of Operating System as resource manager. Explain the important functions of Operating System in detail. (10)

3. Differentiate between followings :

(a) Multiprogramming and multitasking. (5)

(b) Single user and multi-user operating system. (5)

UNIT–II

4. Consider the following set of processed that arrive at time 0, with the length of CPU Burst time (or run time) given in milliseconds.

Process	Burst Time
P1	8
P2	4
P3	7
P4	5

Calculate Average Waiting Time and Average Turnaround time for following :

(i) Shortest job first.

(ii) Round Robin Scheduling.

Consider time quantum of 5 milliseconds. (10)

5. (a) Define deadlock. Explain the necessary conditions for deadlock. (5)

(b) What is a Process? Explain process state transition diagram in detail. (5)

UNIT–III

6. Explain the concept of paging with suitable example. Write its advantages and disadvantages. (10)

7. Explain following :

(a) Virtual Memory. (5)

(b) Inter-process communication. (5)

UNIT–IV

8. What is file management? Explain various file access methods and file protection mechanisms in detail. (10)

9. Explain following with example :

(a) C-SCAN Scheduling. (5)

(b) Directory Structure. (5)