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(20524)
BCA-IV Sem.

(Printed Pages 4)

Roll No. ~ ....

18017

B.C.A. Examination, May-2024

OPERATING SYSTEM

(BCA-402)

Time : 3 Hours]   [Maximum Marks : 75

Section-A

Note : Attempt all the five questions. Each question carries 3 marks. Very short answer is required not exceeding 75 words.   3×5=15

1. What is real time operating system?

2. What is hard and soft semaphore?

3. What is preemptive and Non-preemptive scheduling? Explain.

4. Which are the four conditions that causes the occurence of a deadlock? Explain.

5. What is purpose of system call?

Section-B

(Short Answer Questions)

Note : Attempt any two questions out of the following three questions. Each question carries 7½ marks.

7½×2=15

6. Explain how memory can dynamically allocated using first fit, best fit and worst fit.

7. Describe the critical section problem with suitable example.

8. What is fragmentation problem? Describe the external and Internal fragmentation.

Section-C

(Long Answer Type Questions)

Note : Attempt any **three** questions out of the following five questions. Each question carries 15 marks. 15×3=45

9. Write short notes on the following:

   (a) File allocation method

   (b) Swapping

   (c) Threads

   (d) Disk structure

   (e) Disk scheduling

10. What is deadlock? Explain four necessary conditions for deadlock to occur with suitable example. Describe the different methods for preventation and avoidance of deadlock.

11. What is process synchronization? What are mechanisms to control access to critical section of process? What are the hardware supported solution for process synchronization. Explain in short.

12. (a) What the basic functions does on operating system perform as a resource manager?

    (b) Show disk structure pictorially. Find the total capacity of the disk bared on the disk parameter.

13. What are the different types of files? What are the tasks of the file management system? List some file system related commands in Unix. How does OS ensoure security in file system.