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B.Tech. (Sem. - 4th)

OPERATING SYSTEM

SUBJECT CODE : CS - 202

Paper ID : [A0458]

[Note : Please fill subject code and paper ID on OMR]

Time : 03 Hours **Maximum Marks : 60**

Instruction to Candidates:

1) Section - A is **Compulsory**.
2) Attempt any **Four** questions from Section - B.
3) Attempt any **Two** questions from Section - C.

Section - A

Q1) *(10 × 2 = 20)*

a) Give at least three different view of Operating System.

b) What is a time sharing system?

c) What is meant by saying that program is reentrant?

d) What is a multitasking system?

e) What are the main purposes of an operating system?

f) What are the main advantages of the multiprogramming?

g) What do you understand by Spooling?

h) What is a system call?

i) What is a Process Control Block?

j) What is a process of a program?

Section - B

(4 × 5 = 20)

Q2) Distinguish between preemptive and non-preemptive scheduling policies.

Q3) What are the various memory management techniques? Discuss with example.

Q4) List various free space management techniques and explain them.

Q5) What are the different types of operating system? Explain with example.

Q6) What is the critical section problem. How is it handled?

Section - C

(2 × 10 = 20)

Q7) (a) What is the main advantage of using deadlock detection instead of prevention or avoidance?

(b) List and explain the conditions necessary and sufficient to produce a deadlock.

Q8) A variable partition memory system has at some point in time the following hole sizes in the given order :- 20k, 15k, 40k, 60k, 10k, 25k. A New process is to be loaded. Which hole size would be filled using best-fit, first-fit and worst-fit respectively?

Q9) Suppose that the head of moving head-disk with 200 tracks, numbered 0 to 199, has just finished a request at track 125. The queue of the requests is kept in FIFO order :

86, 147, 91, 177, 94, 150, 102, 175, 130.

What is the total number of head movements needed to satisfy requests for the following disk Scheduling algorithms :-

(a) FCFS

(b) SSTF

(c) Scan.

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