SP - 72

Total No. of Pages : 3

Seat No.	

S.Y.B.Tech. (Computer Science) (Semester - IV) (CBCS)
Examination, December - 2023
OPERATING SYSTEM - I
Sub. Code : 79142

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Day and Date : Saturday, 30 - 12 - 2023 **Total Marks : 70**
Time : 2.30 p.m. to 5.00 p.m.

Instructions :
1) **All questions are compulsory.**
2) **Assume suitable data wherever necessary.**
3) **Figures to the right indicate full marks.**

Q1) Solve MCQs (1 Marks Each) : **[14×1=14]**

a) The operating system in responsible for?

i) Bad-block recovery ii) Booting from disk

iii) Disk initialization iv) All of the mentioned

b) For real time operating systems, interrupt latency should by _____

i) Zero ii) Minimal

iii) Maximum iv) Dependent on the scheduling

c) In a timeshare operating system, when the time slot assigned to a process is completed, the process switches from the current state to?

i) Suspended state ii) Terminated state

iii) Ready state iv) Blocked state

d) An operating system that can do multitasking means that_____

i) The OS can divide up work between several CPUs.

ii) Several programs can be operated concurrently

iii) Multiple people can use the computer concurrently

iv) All of the above

e) Operating system is resident in memory of which part?

i) Middle ii) Lower

iii) Upper iv) All of these

10603

10603

P.T.O.

f) Which of the following is not an operating system?
   i) Windows ii) Linux
   iii) Oracle iv) DOS

g) Thread shares with other threads belonging to the same process its
   i) Thread ID ii) Program counter
   iii) Register set and a stack iv) Code and data section

h) In operating system, each process has its own _____.
   i) Address space and global variables
   ii) Open files
   iii) Pending alarms, signals, and signal handlers
   iv) All of the mentioned

i) _____ contains two kinds of nodes- process nodes, and resource nodes.
   i) RAGG ii) WFG
   iii) WWFG iv) RRAG

j) To prevent _____ condition, either a process that holds resources should not be permitted to make resource requests, or a process that gets blocked on a resource request should not be permitted to hold any resources.
   i) Hold-and-Wait ii) Pre-emption
   iii) Non-shareable iv) Circular Wait

k) In _____, binding performed before the execution of a program (or operation of a software system).
   i) Relative Binding ii) Static Binding
   iii) Dynamic Binding iv) Disk management

l) PCD data is allocated by using a data structure called a heap. Here PCD stands for _____.
   i) Per Candidate Deviation
   ii) Program Controlled Data
   iii) Polly Controlled DE allocated
   iv) Program Controlled Dynamic

m) Main memory is a volatile storage device that loses its contents when power is turned off or otherwise lost.
   i) True
   ii) False

n) Which one is not a correct type of files from the following:
   i) documents, spread sheets, photos, and video clips
   ii) executable programs
   iii) textual information
   iv) compressed large file

Q2) Solve any 2 of the following. (7 Marks Each) **[2×7=14]**

a) What is an operating system? Explain time sharing operating system.

b) Explain Microkernel based operating system

c) What are the different synchronization approaches?

Q3) Solve any 2 of the following. (7 Marks Each) **[2×7=14]**

a) What are the fundamental principles of an Operating System?

b) What is PCB? Why it is required and what are its contents.

c) What are the different scheduling terminologies?

Q4) Solve any 2 of the following. (7 Marks Each) **[2×7=14]**

a) Give an account of deadlock avoidance in detail.

b) What is memory binding? Explain Dynamic Binding.

c) Explain File Types.

Q5) Solve any 2 of the following. (7 Marks Each) **[2×7=14]**

a) Explain the Deadlock Prevention Approach.

b) Give an account of Non-Contiguous memory allocation.

c) Introduce the File system and IOCS.

10603 10603 10603