

[105]

SEAT No. _____

No. of Printed Pages : 2

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Sardar Patel University
External Examination
M.Sc. (Information Technology) Semester – I
PS01CINT24: Operating System Concepts
27th March, 2019 Wednesday

Time: 10:00 AM to 01:00 PM

Max. Marks: 70

Q-1 Choose the most appropriate option for each question. [08]

- (i) ___ is a program which manages entire computer hardware.
a) Operating System b) Database
c) System Call d) None of these
- (ii) ___ is a memory in electronic form.
a) Hard Drive b) Optical Disk
c) Flash Drive d) Tape Drive
- (iii) Synonym of PCB is ____.
a) PCR b) TCB
c) TCR d) TBC
- (iv) The time it takes for the dispatcher to stop one process and start another running is known as ____.
a) Restart Time b) Dispatch Time
c) Dispatch Latency d) Start Latency
- (v) Which of the following is **NOT** relevant in case of memory?
a) Space b) Address
c) Time d) None of These
- (vi) Which of the following is **NOT** a structure of page table?
a) Hierarchical b) Hashed
c) Inverted d) None of these
- (vii) Which of the following is **NOT** a type of file?
a) .jpg b) .org
c) .jpeg d) .doc
- (viii) Which of the following necessary conditions of deadlock cannot be made false to prevent from dead lock?
a) Mutual Exclusion b) Hold and Wait
c) No Preemption d) Circular Wait

Q-2 Answer ANY SEVEN from the following [14]

- (i) List any four structures of operating systems.
(ii) What are main benefits of virtual machines?
(iii) List various possible states of the process.
(iv) What is swapping?
(v) What is semaphore?
(vi) Briefly explain concept of virtual memory.
(vii) What is stack algorithm?
(viii) List different structures of directory.
(ix) What is seek time in context of secondary storage?

①

(P.T.O.)

Q-3
A. Write a note on multiprocessor systems. [06]

B. Explain the working of operating system in dual mode operation by giving example. [06]

OR

B. What is system call? Briefly explain different types of system calls.

Q-4
A. Draw and explain queuing diagram. [06]

B. Write a note on message passing systems for inter process communication. [06]

OR

B. Write a note on critical section problem

Q-5
A. Explain compile time, load time and run time address binding in detail. [06]

B. Explain different types of fragmentations along with their solutions. [06]

OR

B. Explain LRU page replacement algorithm by considering following reference string:

7,0,1,2,0,3,0,4,2,3,0,3,2,1,2,0,1,7,0,1

Assume that each process is given four frames in the memory.

Calculate number of page faults for the same.

Q-6
A. Explain SCAN disk scheduling algorithm by giving suitable example of your choice. Show the calculation of total movement of cylinders. [06]

B. What is RAID? Explain any two benefits of RAID by giving suitable examples. [06]

OR

B. Write a note on file systems.

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