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[52]

SAT No.____ No. of Printed Pages : 2

Sardar Patel University
External Examination
M.Sc. (Information Technology) Semester – I
PS01CINT24: Operating System Concepts
30th October, 2018 Tuesday

Time: 10:00 AM to 01:00 PM **Max. Marks: 70**

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

(i) Missile launching is an example of _____ operating system.
- a) Real time
- b) Time Sharing
- c) Batch
- d) Scientific

(ii) Full form of DMA is ___.
- a) Distributed Memory Access
- b) Direct Memory Access
- c) Distributed Memory Allocation
- d) Direct Memory Allocation

(iii) PCB is also known as __.
- a) Process Communication Block
- b) Process Control Box
- c) Task Control Block
- d) None of These

(iv) Which of the following queue is NOT present in queuing diagram?
- a) Ready
- b) Device
- c) Job
- d) None of These

(v) Virtual memory is normally implemented by _____.
- a) Demand Paging
- b) RAID
- c) Virtualization
- d) Paging

(vi) The technique used to solve problem of external fragmentation is known as __.
- a) Compaction
- b) Segmentation
- c) Demand Paging
- d) Virtual Memory

(vii) From the following which operation not concern with file operation?
- a) Create
- b) Read
- c) Compress
- d) None of these

(viii) Which of the following term is related to total number of bytes transferred?
- a) Seek Time
- b) Rotational Latency
- c) Bandwidth
- d) None of these

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

(i) What is Time sharing Operating System?
(ii) What is interrupt?
(iii) Draw the structure of PCB.
(iv) Differentiate: Short term and long term scheduler.
(v) What is System Call? Give any two examples of system call.
(vi) **Differentiate:** Logical address Vs. Physical address.
(vii) What is page table?
(viii) List different types of directories.
(ix) What is RAID?

Q-3

A. Write a note on Multiprocessor Systems. [06]

B. Explain the dual mode operation of operating systems. [06]

OR

B. Write a note on Virtual Machine.

Q-4

A. Define the terms process and program. Draw and explain process state diagram. [06]

B. Explain Deadlock with suitable example. Also discuss the necessary conditions in detail which characterize the deadlock. [06]

OR

B. Write a note on monitors.

Q-5

A. Explain concept of virtual memory with its merits & demerits. Discuss steps for handling page fault. [06]

B. Write a note on swapping. [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. What is file? Explain various file related attributes and operation performed on it. [06]

B. What is disk scheduling? List various algorithms for disk scheduling. Explain any one disk scheduling algorithm by giving suitable example. [06]

OR

B. List various levels of RAID. Explain any two of them in detail.