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SARDAR PATEL UNIVERSITY

Masters in Information Technology (IT)
Semester – I (NC) Examination – April-2016
PS01CINT05: Operating System Concepts

Date: 13-04-2016 **Time: 10:30 To 01:30 P.M.** **Max. Marks: 70**

NOTE: Figure indicated right is maximum marks for each question

Q: 1 Select an appropriate option for the following **[08]**

[1] The solution for indefinite blockage (Starvation) is,
(a) Aging **(b)** Priority **(c)** SJF **(d)** Latency time

[2] When a system made a rigid behavior towards the specific time period for scientific process execution it is known as _____ operating system.
(a) Time sharing **(b)** Multiuser **(c)** Real **(d)** Real Time

[3] Number of processes completed per time unit is called _____.
(a) Throughput **(b)** Seek Time **(c)** Quantum Time **(d)** Turnaround Time

[4] Which one of the following is a synchronization tool?
(a) Thread **(b)** Pipe **(c)** Semaphore **(d)** Socket

[5] A solution to the problem of external fragmentation is:
(a) Compaction **(b)** larger memory space
(c) Smaller memory space **(d)** None of these

[6] _____ is a heart of operating system & worked as an interface between users and Operating system
(a) Server **(b)** Interface **(c)** Kernel **(d)** Software

[7] _____ is an operating system module which transfers control of CPU from one process to another.
(a) PCB **(b)** Scheduler **(c)** CPU **(d)** Dispatcher

[8] Demand paging is similar to paging with _____.
(a) Swapping **(b)** IPC **(c)** Debugger **(d)** Page Replacement

Q: 2 Answer the following questions in brief [Attempt any seven] **[14]**

[1] **Define:** [a] Thread [b] Throughput
[2] Lists various strategies to select a free hole (partition) from the set of available holes. Explain any one strategy in brief.
[3] What is swapping? Why it is needed?
[4] Explain PCB. Discuss the types of information stored in.
[5] Explain Real-time operating system in brief
[6] Discuss the various benefits of the multithreaded programming in brief.
[7] Explain frame and Belady's Anomaly.
[8] List down various file operations. Explain any two in brief
[9] Briefly explain concept of microkernel.

[P.T.O]

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Q: 3 **[A]** What is Operating System? Explain functions and services of operating system in detail. **[06]**

[B] Draw & explain Process State Transition (Process States) in detail with example **[06]**

OR

[B] Differentiate:
[1] Preemptive scheduling algorithm vs. Non-preemptive scheduling Algorithm
[2] Program V/S Process **[06]**

Q: 4 **[A]** Explain Deadlock with suitable example. Also discuss the necessary conditions in detail which characterize the deadlock **[06]**

[B] Explain SCAN and C-SCAN Disk Scheduling Algorithms with example **[06]**

OR

[B] Explain FCFS and Round Robin CPU Scheduling algorithm with suitable example **[06]**

Q: 5 **[A] Write answers for following:** **[06]**
[1] Explain concept of virtual memory with its merits & demerits.
[2] Explain pwd, & date commands with suitable example

[B] What do you mean by memory allocation? Explain contiguous memory allocation in brief. **[06]**

OR

[B] Define: Page Fault. Explain Steps for handling Page Fault (Demand Paging) through Diagram. **[06]**

Q: 6 **[A] Write a Short Note on,** [1] Magnetic Disk [2] Floppy Disk **[06]**

[B] Explain term file. Discuss various methods to access file information from file in detail **[06]**

OR

[B] Explain RAID structure with level 3 and level 5 in detail. **[06]**

@@@@@ ALL THE BEST @@@@@