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SARDAR PATEL UNIVERSITY
M.Sc (Information Technology) - Semester I
External Examination - 2016
PS01CINT05 : Operating System Concepts
Date: Friday, 28th October' 2016

Time: 10.00am to 1.00pm

Max. Marks: 70

Note: Marks Indicates right is maximum marks for each question

Q:1 Select the appropriate option from the following [08]

- [1] From the following, which is not common file permission?
[a] Write [b] Execute [c] Stop [d] Read
- [2] When several processes access the same data concurrently and the outcome of the execution depends on the particular order in which the access takes place, is called _____ condition
[a] Dynamic [b] Race [c] Essential [d] Critical
- [3] The _____ scheduling algorithm is designed especially for timesharing systems.
[a] FCFS [b] Priority [c] SJF [d] Round Robin
- [4] The technique used to solved problem of external fragmentation is known as _____
[a] Process [b] Compaction [c] Command [d] Paging
- [5] The technique of duplicating every disk is known as _____.
[a] Scheduling [b] Stripping [c] Mirroring [d] Redundancy
- [6] Multitasking System is also known as _____.
[a] Multi-User [b] Network [c] Time sharing [d] None of these
- [7] _____ Buffer having a fixed size.
[a] Un-Bounded [b] Fixed [c] Bounded [d] None of these
- [8] _____ Command is used to rename existing file in UNIX.
[a] Rename [b] ls [c] mv [d] who

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

- [1] Explain concept of Virtual Memory with its merits and demerits.
- [2] What is starvation and how it will manage?
- [3] List out characteristics of Deadlock Occurrence. Explain any one in brief.
- [4] What is Belady's Anomaly?
- [5] Discuss concept of swapping
- [6] **Differentiate:** Hard Real time OS V/S Soft Real time OS
- [7] List and explain various file attributes in brief.
- [8] Explain Partition Selection (Selection of Hole) Strategies with example
- [9] What is PCB (TCB)? Explain in brief which type of information stored in PCB?

[P.T.O]

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Q:3[A] What do you mean by Operating System? Write functions of OS in detail. [06]

Q:3[B] List types of Operating System. Explain Multiprocessors System in detail. [06]

OR

[B] What is Process? Explain Process States (Process Life Cycle) with diagram. [06]

Q:4[A] What is page fault? Explain concept of Demand Paging in detail through diagram. [06]

Q:4[B] Explain Critical Section problem with all necessary conditions. [06]

OR

[B] Explain Optimal Page Replacement algorithm and Solve following example using Optimal Page Replacement. [06]

Reference String : 1,2,3,4,2,1,5,6,2,1,2,3,7,6,3,2,1,2,3,6

Frames Size: 3

Q:5[A] Discuss contiguous memory allocation with all its types in brief [06]

Q:5[B] Explain SSTF and SCAN disk scheduling algorithm with example. [06]

OR

[B] Explain RAID structure with any of two levels of your choice in detail. [06]

Q:6[A] What is file? Lists various file accessing methods to fetch file information. [06]
Also explain basic operations possible to perform on file

Q:6[B] Explain Following UNIX commands with syntax and example. [06]

[a] ls

[b] rm

[c] who

OR

[B] Explain pwd, man and cat commands with syntax and suitable example [06]

Best ☺ Luck