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

Time: 10.00am to 1.00pm

Max. Marks: 70

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**Note:** Marks Indicates right is maximum marks for each question
 

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**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 ###**