

(48)

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

Date: 13-04-2016

G.M.
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]

- 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 [06]
[2] Program V/S Process

- 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 @@@@@

— X —
②