[11 / A-41]

SARDAR PATEL UNIVERSITY

B. C. A. Examination, 4th Semester
Thursday, 07th April, 2016
US04CBCA03: Operating Systems

Time: 10:30 AM to 01:30 PM　　　　　　　　　　　**Total Marks: 70**

Note: Answer of all the questions (including Multiple Choice Questions) should be written in the provided answer book only

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Q:1　Give answers of following Multiple Choice Questions　　　　　**[10]**

[01] In monolithic structure, the OS divided into number of _____.

(A) Files　　　　　　　　　　　(B) Functions
(C) Procedures　　　　　　　　(D) Programs

[02] _____ types of OS used in scientific research and robotics.

(A) Real-time　　　　　　　　(B) Time-sharing
(C) Multi-user　　　　　　　(D) None of these

[03] The number of processes completed per unit time is known as _____.

(A) Turn-around Time　　　　(B) Throughput
(C) Waiting time　　　　　　(D) None of these

[04] Which of the following memory allocation strategy is fastest?

(A) Best-fit　　　　　　　　(B) Worst-fit
(C) Optimal-fit　　　　　　(D) First-fit

[05] In Paging, Physical memory is divided into fixed-size blocks is called _____.

(A) Files　　　　　　　　　(B) Pages
(C) Frames　　　　　　　　(D) None of these

[06] _____ scheduling algorithm gives minimum Page Faults.

(A) FIFO　　　　　　　　　(B) LRU
(C) Second Chance　　　　(D) None of these

[07] A _____ process produces information that is consumed by a consumer process.

(A) Consumer　　　　　　　(B) Producer
(C) Computation　　　　　(D) None of these

[08] Each process has a segment of code called _____

(A) Important section　　(B) Critical section
(C) Mutual section　　　　(D) None of these

[09] _____ option of date command will display full month name.

(A) -a　　　　　　　　　　(B) -b
(C) -B　　　　　　　　　　(D) None of these

[10] _____ command is use to change a permission of a file.

(A) change　　　　　　　　(B) chmod
(C) chmode　　　　　　　　(D) man

①

Q:2 Answer the following short questions (any Ten)   [20]

[01] Define Operating system.

[02] What is process? List out all process States.

[03] Draw the diagram of PCB.

[04] Explain First-fit memory allocation techniques.

[05] What is Compaction? For what purpose it will use?

[06] Calculate Page faults using FIFO algorithm for following reference string: (Number of Frames = 3)

Reference string = 7, 0, 1, 0, 2, 3, 0, 4, 3, 2, 0, 3, 2, 1, 2, 0, 1, 0, 7, 1

[07] When Race conditions arise?

[08] Explain algorithm-1 for two-process solution.

[09] Explain resource utilization in details.

[10] Explain ls –l command.

[11] Explain if statement in LINUX.

[12] Explain use of mkdir and rmdir command.

Q:3 [A] Which are the functions performed by Operating System? Explain.   **[05]**

[B] Draw Gantt chart and find Average Waiting Time (AWT) using   **[05]**
FCFS Scheduling Algorithm:

PROCESS	BURST TIME
P1	8
P2	3
P3	12
P4	5

OR

Q:3 [C] Explain Layered approach in detail.   **[05]**

[D] Draw Gantt chart and find Average Waiting Time (AWT) using SJF   **[05]**
Scheduling Algorithm:

PROCESS	BURST TIME	ARRIVAL TIME
P1	9	0
P2	7	1
P3	6	2
P4	10	3
P5	2	3

②

Q:4 **[A]** Explain Memory allocation techniques in detail. **[10]**

OR

Q:4 **[B]** What is paging? Explain demand paging in detail. **[10]**

Q:5 **[A]** What is Cooperative Process? Explain Producer-Consumer **[06]** Problem.

[B] What is LINUX? Explain basic features of LINUX Operating **[04]** System.

OR

Q:5 **[C]** Explain Critical-section problem in details. Explain algorithm 3 for **[06]** solving critical section problem for two-process.

[D] Explain EXT2 File system in details. **[04]**

Q:6 **[A]** Explain date and ls command in detail. **[06]**

[B] Explain Environment variables of Linux. **[04]**

OR

Q:6 **[C]** Explain grep command with at least four possible attributes and **[06]** examples.

[D] Explain if and case statement in LINUX. **[04]**

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