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SARDAR PATEL UNIVERSITY

B. Sc. CA & IT Examination, 3rd Semester

Monday, 14th November, 2022,

US03CIIT27: Operating Systems

Time: 02:00 PM

Total Marks: 70

Note: Figure to the right indicate full marks of the questions

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

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] What is Belady's Anomaly?
- [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] Explain process state and PCB in brief. **[05]**

OR

- Q:3 [C]** Explain Layered approach in detail. **[05]**
[D] Explain SJF scheduling algorithm in brief. **[05]**

- 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]** Explain Critical-section problem in details. Explain algorithm 3 for solving critical section problem for two-process. **[06]**
[B] What is LINUX? Explain basic features of LINUX Operating System. **[04]**

OR

- Q:5 [C]** What are the necessary conditions for Deadlock prevention? **[06]**
[D] Explain EXT2 File system in details. **[04]**

- Q:6 [A]** Explain date and ls command in detail. **[06]**
[B] What is FAP? Explain various ways to change permission on a file. **[04]**

OR

- Q:6 [C]** Explain grep command with at least four possible attributes and examples. **[06]**
[D] Explain if and case statement in LINUX. **[04]**