

[15/16]

SARDAR PATEL UNIVERSITY
B.Sc (CA & IT) (SEMESTER-III) EXAMINATION December-2020

31st December 2020, Thursday
10:00 a.m. to 12:00 p.m.

PS/US03CIIT27 (Operating Systems)

Marks: 70
[10]

Q.1 Multiple Choice Questions

- 1 Compiler is an example of which components of Operating system?
(a) Hardware (b) System Program (c) Application Program (d) None
- 2 Patient Monitoring in hospital is an example of which type of OS?
(a) Multi User (b) Real Time (c) Time Sharing (d) None
- 3 A Program in execution is known as _____.
(a) Process (b) Files (c) Commands (d) None of these
- 4 Technique use to solve problem of external fragmentation is known as _____.
(a) Process (b) Compaction (c) Aging (d) None of these
- 5 _____ is not a valid Memory allocation algorithm.
(a) Suit-fit (b) Worse-fit (c) Best-fit (d) First-fit
- 6 A Lazy Swapper is also known as _____.
(a) Pager (b) Frames (c) Pages (d) None of these
- 7 A _____ process produces information that is consumed by a consumer process.
(a) Consumer (b) Producer (c) Computation (d) None
- 8 Each process has a segment of code called _____.
(a) important Section (b) Critical Section (c) Mutual Section (d) None
- 9 _____ Option of ls command will sort output according to size of file.
(a) -c (b) -b (c) -S (d) None
- 10 _____ Option of rm command will display permissions of a user before delete any file.
(a) -r (b) -i (c) -f (d) None

Q.2 Answer the Following.

[08]

- 1 File is NOT a valid Process state. (True / False)
- 2 PCB stands for _____
- 3 Swapping of process requires backing storage. (True / False)
- 4 In Paging, Physical memory is divided into fixed-size blocks is called _____
- 5 The process which cannot affect or be affected by the other processes executing in the system is known as _____
- 6 Critical Section problem for n processes is known as Critics Algorithm. (True / False)
- 7 man command is use to display help of LINUX commands. (True / False)
- 8 _____ Option of vi editor is use to delete a line.

Q.3 Answer the Following. (Any 10)

[20]

- 1 Explain Key elements of OS.
- 2 Differentiate between process and program.
- 3 What is Context Switching?
- 4 Explain Internal Fragmentation in short.
- 5 Explain First-fit memory allocation techniques.
- 6 Calculate Page faults using FIFO algorithm for following reference string: (Number of Frames = 3) Reference string = 7,0,1,2,0,3,0,4,2,3,0,3,2,1,2,0,1,7,0,1
- 7 Explain any two necessary conditions of Deadlock.
- 8 When Race conditions arise?
- 9 Why is LINUX an open source?

- 10 Explain who command in brief.
- 11 Explain if statement in LINUX
- 12 Explain rm command with all its attributes.

Q.4 Answer the Following.(Any 4)

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- 1 Which are the functions performed by Operating System?
- 2 Draw Gantt chart and find average waiting time using preemptive and Non-preemptive SJF Scheduling algorithm. (When all processes arrive at same time)

PROCESS	BURST TIME
P1	3
P2	4
P3	2
P4	6

- 3 Explain Swapping of two processes with suitable example.
- 4 What is Fragmentation? List different types of Fragmentation. Explain in details.
- 5 What is Cooperative Process? Explain Producer-Consumer Problem.
- 6 List out differences between cooperative and independent process. Also explain advantages of cooperative process.
- 7 Explain following commands:
a) date b) ls c) rmdir
- 8 Explain following commands with example:
a) who b) pwd c) mkdir

