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(664 A-21) **SEAT No.**_____ **Total No. of printed pages 2**

SARDAR PATEL UNIVERSITY
External Examination - 2018
SYBCA – SEMESTER-IV
US04CBCA03 – Operating System

Date: 07/04/2018 , Saturday **Time: 02:00 P.M. to 05:00 P.M.** **Marks: 70**

Q-1 **Multiple choice questions.** **[10]**

i) The number of processes completed per unit time is known as _____.
(a) Turn-around Time (b) Throughput
(c)Waiting time (d) None Of these

ii) _____ Scheduler select process from ready queue for execution.
(a) Short-term (b) Long-term
(c) Medium-term (d) None of these

iii) The degree of Multiprogramming is controlled by _____.
(a) CPU Scheduler (b) Context Switch
(c) Medium term scheduler (d) Long term Scheduler

iv) A page fault occurs _____.
(a) When Page in Main-Memory (b) When Page is not in Memory
(c) When Page Blocked (d) None of these

v) A technique that allows the execution of a job that may not be completely in memory is called _____.
(a) Main-Memory (b) RAM
(c) Virtual Memory (d) None of these

vi) Access to a page marked invalid causes _____.
(a) Fragmentation (b) Demand Paging
(c) Invalid Pages (d) Page fault

vii) If resources are not available at requested time then process enters in _____state.
(a) request (b)Wait (c) Queue (d) None

viii) The concept in which output depends on sequence of process execution is known as _____.
(a) output-condition (b) Run
(c) Race-Condition (d) None

ix) _____ command is use to merge multiple files.
(a) merge (b) paste
(c) cp (d) None

x) _____ command is use to change a permission of a file.
(a) chmod (b) change
(c) ls (d) man

Q-2 **Answer the following (Any Ten)** **[20]**

[1] Draw the diagram of **PCB**.
[2] Define 1) **Context Switch** 2) **Long term Scheduler**
[3] What is **process**? List out all **process** States.
[4] 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
[5] Explain **Virtual memory** in short.
[6] What **is Belady's Anomaly**?
[7] Why is LINUX an open source?
[8] Explain **resource utilization** in details.

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[9] Define **Race conditions**.
[10] Explain **who** command in brief.
[11] Explain use of **mkdir** and **rmdir** command.
[12] Explain **cp** command with all its attributes.

Q-3 [A] Explain **Layered** approach in detail. [05]
[B] Draw Gantt chart and find average waiting time(AWT) and average Turn around time using **Round Robin** Scheduling algorithm using Time Quantum 4 . [05]

Process	Burst Time
P1	10
P2	7
P3	8
P4	5

OR

Q-3 [A] Explain **functions** performed by Operating System in detail. [05]
[B] Draw Gantt chart and find average waiting time(AWT) and average Turn around time using **Non Preemptive Priority** Scheduling algorithm. [05]

Process	Burst Time	Priority
P1	10	3
P2	7	2
P3	8	4
P4	5	1

Q-4 Explain **Demand Paging** in detail. [10]

OR

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

Q-5 [A] Explain **EXT2 File system** in details. [05]
[B] Explain **Algorithm 1** and **Algorithm 2** for two process solution. [05]

OR

Q-5 [A] What do you mean by **Deadlock**? Explain all necessary conditions for occurrence of deadlock. [05]
[B] What is LINUX? Explain basic features of **LINUX Operating System**. [05]

Q-6 [A] Explain **if** and **case** statement in LINUX with example. [05]
[B] What is **Shell script**? Explain uses of **Shell script** and execution of shell script. [05]

OR

Q-6 [A] Explain different **loops** in Linux with example. [05]
[B] Explain **ls** command with all switches. [05]

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