Seat No.: _____

[42]

No. of Printed Pages: 2

SARDAR PATEL UNIVERSITY
P.G.D.C.A.A. Semester – I
External Examination – October 2016
[PS01FDCT01]: Operating System

Friday - 28th October' 2016 **Time: 10.00am to 1.00pm** **Max. Marks: 70**

NOTE: [1] Figure indicated right is maximum marks for each question
[2] Show calculation where and when needed

Q: 1 Select the appropriate option from the following **[08]**

[1] The storage capacity of a floppy disk is typically only _____.
[a] 1.44MB **[b]** 100MB **[c]** 10MB **[d]** 5MB

[2] _____ is a heart of operating system & worked as an interface between users and operating system.
[a] Kernel **[b]** Interface **[c]** Server **[d]** Software

[3] Layered architecture os operating system having _____ layers
[a] Six **[b]** Five **[c]** Four **[d]** Seven

[4] Which of the following page replacement algorithms suffers from Belady's Anomaly ?
[a] FIFO **[b]** LRU **[c]** Optimal **[d]** None of the above

[5] The _____ scheduling algorithm is designed especially for timesharing systems.
[a] FCFS **[b]** Priority **[c]** SJF **[d]** Round Robin

[6] _____ command is used to terminate process.
[a] fork() **[b]** kill() **[c]** cp **[d]** cd

[7] _____ is the total number of processes that complete their execution per time unit.
[a] Throughput **[b]** Output **[c]** Process **[d]** CPU Utilization

[8] The technique used to solved problem of external fragmentation is known as _____
[a] Process **[b]** Compaction **[c]** Command **[d]** Paging

Q: 2 Answer the following questions in brief [Attempt any seven] **[14]**

[1] **Define:** Operating System. List types of Operating System.
[2] List structure of Operating System and explain any one of them in brief
[3] **Explain terms: [1]** Program **[2]** Process
[4] What do you mean by schedulers? List types of schedulers
[5] Write a note on Real time Operating System
[6] Lists and explain various strategies to select a free hole (partition) from the set of available holes.
[7] Explain deadlock. List necessary conditions to characterize deadlock
[8] What is Fragmentation?
[9] Explain cp, cat commands of unix

[P.T.O]

Q: 3 **[A]** List functions of operating system and explain any four of them in detail **[06]**

[B] Write a detail note on Process Control Block (PCB) **[06]**

OR

[B] **[1]** Briefly explain concept of swapping **[03]**
[2] What is virtual memory? Write its merits and demerits **[03]**

Q: 4 **[A]** Explain Process state life cycle in detail through diagram. List operations performed on Process **[06]**

[B] Draw Gantt Chart to find Average Waiting Time (AWT) for following example, using FCFS and Non-Preemptive SJF algorithm, **[06]**

Process :	**A**	**B**	**C**	**D**	**E**
Arrival Time :	0	1	2	3	4
Burst Time :	4	8	5	2	1

OR

[B] Write a note on Round Robin Scheduling algorithm with appropriate example **[06]**

Q: 5 **[A]** List types of memory allocation. Explain Contiguous Memory Allocation in detail **[06]**

[B] Count page faults for following reference string using FIFO page replacement Algorithm **[06]**
Reference String: 7,0,1,2,0,3,0,4,2,3,0,3,2,1,2,0,1,7,0,1 **Frame Size: 3**

OR

[B] **Define:** Page Fault. Discuss Steps for Page Fault handling concept (Demand Paging) through Diagram **[06]**

Q: 6 **[A]** What is Unix? Explain evolution of Unix **[06]**

[B] List features of unix. Explain various modes available in Vi Editor **[06]**

OR

[B] Explain grep, man, and mkdir commands of unix in brief **[06]**

Best ☺f Luck