

January 2019

Post Graduate Diploma in Computer Application (PGDCA) Examination

Ist Semester

OPERATING SYSTEM

Time 3 Hours]

[Max. Marks 100

**Note : Attempt any two parts from each question. All questions carry equal marks. All parts of a question carry equal marks.**

1. (a) Explain Multi Programming and Time Sharing Operating System.  
(b) What is a PCB ? What information is stored in a PCB and how it is useful in execution of a process ?  
(c) What do you understand by critical section problem ? What are the basic requirement as a solution to the critical section problem.
2. (a) Explain banker's algorithm for deadlock handling. What do you mean by safe state and unsafe state ? Give examples.  
(b) What is a real time operating system ? What scheduling methods are used in real-time operating system ?  
(c) Assume following processes :

Process Id	A	B	C	D
Arrival Time	0	1	2	3
Execution Time	3	4	1	2

Explain how this processes will be executed using round robin scheduling. Also calculate the waiting time and finish time of each process. Assume  $q = 1$ .
3. (a) Write the difference between internal and external Fragmentation Problem.  
(b) Explain the concept of segmentation with example. Also write the advantages of segmentation.  
(c) Describe a paging scheme for memory management.
4. (a) Explain following internal commands with example :  
(1) DIR (2) MD (3) DEL (4) COPY (5) PROMPT.  
(b) Explain following external commands with example :  
(1) SORT (2) ATTRIB (3) DOSKEY (4) MOVE (5) APPEND.  
(c) Write the difference between COM, EXE and Batch file.
5. (a) Write the following commands with example :  
(1) chgrp (2) cmp (3) find (4) kill (5) cp.  
(b) What are the main features of Linux Operating System ?  
(c) (i) Explain the concept of process creation and process identifier ;  
(ii) Kernel and Shell in Linux.

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