CS & IT

Operating System

DPP

Process Management

Q1 In operating system, each process has its own?
(A) Address space and global variables
(B) Open files
(C) Resources to be used
(D) All of the mentioned

Q2 A process can be terminated due to?
(A) Normal exit
(B) Fatal error
(C) killed by another process
(D) All of the mentioned

Q3 Consider a system with degree of multiprogramming as N and M number of CPUs (where N>=M). Maximum number of processes possible in running state simultaneously is _____?
(A) N (B) M
(C) 1 (D) 0

Q4 A Process Control Block (PCB) does not contain which of the following?
(A) Process Code
(B) Stack
(C) Bootstrap program
(D) Process Data

Q5 What is the objective of multiprogramming?
(A) Have a process running at all time
(B) Have multiple programs waiting in a queue ready to run
(C) To decrease CPU utilization
(D) None of the mentioned

Q6 The state of a process is defined by _____
(A) The final activity of the process
(B) The activity just executed by the process
(C) The activity to next be executed by the process
(D) The current activity of the process

Q7 Dual mode of operation is used in computer system to implement?
(A) System protection
(B) System security
(C) System identification
(D) System authentication

Q8 Which of the following type of Operating system was invented because one process was not able to keep the CPU and IO devices busy simultaneously?
(A) Uniprogramming OS
(B) Multiprogramming OS
(C) Multiprocessing OS
(D) Realtime OS

Answer Key

Q1	(D)	Q5	(B)
Q2	(D)	Q6	(D)
Q3	(B)	Q7	(A)
Q4	(A, B, C, D)	Q8	(B)

Hints & Solutions

Q1 Text Solution:

When a process is allocated in memory then it has its own address space to store instructions, then its own space to store global variables, local variables and static variables also. The process has resources allocated to it, which can not be used by other processes until this process releases them. The process has its own open files also.

Q2 Text Solution:

A process can terminate with normal exit when the process execution completes normally.

Any process can be killed by other process also like OS kills a process.

Any process can be terminated due to some exception or unexpected error occurring during its execution.

Q3 Text Solution:

There are M CPUs and N processes. Hence maximum M processes one in each CPU can be in running as a time.

Q4 Text Solution:

PCB contains the meta data of the process like process ID, process state, process priority, process size in memory, process memory limits, list of files opened, list of resources etc. The PCB does not contain stack, code data or bootstrap program.

Q5 Text Solution:

Multiprogramming was introduced with the purpose of increasing the CPU utilization by keeping multiple ready to running processes in ready queue, so that when any running process goes for IO operation then other process can be scheduled to run on CPU to keep CPU always busy.

Q6 Text Solution:

State of the process is the current activity of the process which process is doing currently.

If a process is running in CPU then the state of the process is running state

If a process is waiting for IO then the state of the process is waiting or blocked.

Q7 Text Solution:

Dual mode of operation is used so that only OS can run the privileged instructions or processes which are to be run by OS only not be any user process. So that system can be protected by processes.

Q8 Text Solution:

When in uniprogramming OS, the only available process was going for IO operation by leaving CPU, then CPU was free. Hence multiprogramming OS was invented so that if a process goes for IO operation then other process will be ready to run on CPU to increase CPU utilization along with IO usage.