**University of Central Punjab**

**Faculty of Information Technology**

**Course: Operating Systems Instructor: Engr .Farah Raza**

**Section: G,E**

**Date: 7th November, 2019 Topic: Process**

**Practice Questions**

Q1. CPU scheduling decisions takes place under following conditions:

1. When a process switches from running to ready state
2. When a process switches from running state to waiting state
3. When a process terminates
4. All of the Above

Q2. The module that gives control of the CPU to the process selected by the short-term scheduler is?

1. Scheduler
2. Dispatcher
3. Kernel
4. None of the above

Q3. The processes that are ready to be executed and are residing in main memory are kept in

1. job queue
2. ready queue
3. waiting queue
4. process queue

Q4. What is Turnaround time of a process?

1. Time spent in waiting queue
2. Time spent in ready queue + waiting queue + running state
3. Time spent in ready queue + waiting queue
4. Time spent in ready queue

Q5. What is a medium-term scheduler?

1. It selects which process has to be brought into the ready queue
2. It selects which process has to be executed next and allocates CPU
3. It selects which process to remove from memory by swapping
4. None of these

Q6. When CPU becomes idle which scheduler is called?

1. Short term scheduler
2. Long term scheduler
3. Long term scheduler
4. Any

Q7. What is meant by throughput?

1. Number of processes running in the system
2. Number of process completed per unit time by the system
3. Number of processes waiting for CPU per unit time
4. None of the above

Q8. The strategy of making processes that are logically runnable to be temporarily suspended is called :

1. Non preemptive scheduling
2. Preemptive scheduling
3. Shortest job first
4. First come First served

Q9. In the running state

1. Only the process which has control of the processor is found .
2. All the processes waiting for I/O to be completed are found .
3. All the processes waiting for the processor are found.
4. None of the above.

Q.10 Process state is a part of

1. PCB
2. Inode
3. FAT
4. None of the above

Q.11 The kernel keeps track of the state of each task by using a data structure

1. PCB
2. User Control Block
3. Memory Control Block
4. None of the above

Q.12 Increasing the multiprogramming level can be accomplished by:

1. Packing more processes into memory.
2. Reducing memory fragmentation.
3. Sharing code and data among different processes.
4. All of the above

Q.13The following events may occur to a process. Identify the starting state it is in at the time of the event and the ending state it transitions to.

|  |  |  |
| --- | --- | --- |
| **Event** | **Starting state** | **Ending state** |
| Program started by user |  |  |
| Scheduler dispatches process |  |  |
| I/O complete |  |  |
| Process admitted to ready queue for first time |  |  |
| Scheduler preempts (interrupts) process |  |  |
| Process finishes execution (task is complete) |  |  |
| Process initiates I/O |  |  |

We had discussed context switching quantum in the class. You all have to read the given answers and raise your own questions from the given answer.

**A14.** Switching from one process to another requires a certain amount of time to save and load registers, update various tables and lists etc.

Consider, as an example, process switch or context switch takes 5 m sec and time slice duration be 20 m sec. Thus CPU has to spend 5 m sec on process switching again and again wasting 20% of CPU time. Let the time slice size be set to say 500 m sec and 10 processes are in the ready queue. If P1 starts executing for first time slice then P2 will have to wait for 1/2 sec; and waiting time for other processes will increase. The unlucky last (P10) will have to wait for 5 sec, assuming that all others use their full time slices. To conclude setting the time slice.

* Too short will cause too many process switches and will lower CPU efficiency.
* Setting too long will cause poor response to short interactive processes.
* A quantum around 10 -100 m sec is usually reasonable.