

**Mid Semester Assignment**  
**Spring 2020**  
**Subject: Operating System Concepts**

*Section A*

Question No: 1 ( M - 1 )

*The hardware mechanism that enables a device to notify CPU is called an -----*

- ▶ Interrupt
- ▶ Signal
- ▶ Trap
- ▶ Process

**ANSWER :** Interrupt

Question No: 2 ( M - 1 )

*The section of the process control block comprises of page and segment tables*

- ▶ Memory related information
- ▶ Accounting information
- ▶ Register information
- ▶ Scheduling information

**ANSWER :** Memory related information

Question No: 3 ( M - 1 )

*The ----- system call suspends the calling process.*

- ▶ fork
- ▶ wait
- ▶ exec
- ▶ exit

**ANSWER :** Wait

Question No: 4 ( M - 1 )

*In -----addressing, the recipient is not required to name the sender.*

- ▶ Symmetric
- ▶ Asymmetric
- ▶ Both symmetric and asymmetric
- ▶ None of the given options

**ANSWER :** Asymmetric

Question No: 5 ( M - 1 )

*----- command gives a snapshot of the current processes.*

- ▶ ps
- ▶ top
- ▶ who
- ▶ ls

**ANSWER :** ps

Question No: 6 ( M - 1 )

-----**command to resume the execution of a suspended job in the foreground**

- ▶ fg
- ▶ bg
- ▶ jobs
- ▶ kill

**ANSWER:** fg

Question No: 7 ( M - 1 )

**You can use the ----- command to display the status of suspended and background processes**

- ▶ fg
- ▶ bg
- ▶ jobs
- ▶ kill

**ANSWER:** jobs

Question No: 8 ( M - 1 )

**You can terminate a foreground process by pressing -----;**

- ▶ <Ctrl-A>
- ▶ <Ctrl-C>
- ▶ <Ctrl-Z>
- ▶ None of the given options

**ANSWER:** <Ctrl-C>

Question No: 9 ( M - 1 )

**A time sharing system is**

- ▶ Multi-tasking
- ▶ Interactive
- ▶ Multi user
- ▶ All of these

**ANSWER:** Multi-tasking

Question No: 10 ( M - 1 )

**The main characteristic of a Real time system is**

- ▶ Efficiency
- ▶ Large Virtual Memory
- ▶ Large secondary storage device
- ▶ Usability

**ANSWER:** Efficiency

Question No: 11 ( M - 1 )

**Shared libraries and kernel modules are stored in \_\_\_\_\_ directory**

- ▶ /bin
- ▶ /dev
- ▶ /boot
- ▶ /lib

**ANSWER:** /lib

Question No: 12 ( M - 1 )

\_\_\_\_\_ *scheduler selects the process from the job pool and put them in main memory.*

- ▶ Long term
- ▶ Short term
- ▶ Medium term
- ▶ Swapper

**ANSWER:** Long term

Question No: 13 ( M - 1 )

*In indirect inter process communication, a sender \_\_\_\_ mention the name of the recipient.*

- ▶ do
- ▶ do not

**ANSWER:** do

Question No: 14 ( M - 1 )

*A \_\_\_\_\_ is an integer variable that, apart from initialization is accessible only through two standard atomic operations: wait and signal.*

- ▶ Semaphore
- ▶ Monitor
- ▶ Critical region
- ▶ Critical section

**ANSWER:** Semaphore

Question No: 15 ( M - 1 )

*A semaphore that cause Busy-Waiting is termed as \_\_\_\_\_.*

- ▶ Spinlock
- ▶ Monitor
- ▶ Critical region
- ▶ Critical section

**ANSWER:** Spinlock

Question No: 16 ( M - 1 )

*The execution of critical sections must NOT be mutually exclusive*

- ▶ True
- ▶ False

**ANSWER:** False

Question No: 17 ( M - 1 )

*The performance of Round Robin algorithm does NOT depends heavily on the size of the time quantum.*

- ▶ True
- ▶ False

**ANSWER:** False

Question No: 18 ( M - 1 )

**The following requirement for solving critical section problem is known as \_\_\_\_\_.**

**“There exists a bound on the number of times that other processes are allowed to enter their critical sections after a process has made a request to enter its critical section and before that request is granted.”**

- ▶ Progress
- ▶ Bounded Waiting
- ▶ Mutual Exclusion
- ▶ Critical Region

**ANSWER:** Mutual Exclusion

Question No: 19 ( M - 1 )

**The critical section problem can be solved by the following except**

- ▶ Software based solution
- ▶ Firmware based solution
- ▶ Operating system based solution
- ▶ Hardware based solution

**ANSWER:** Firmware based solution

Question No: 20 ( M - 1 )

**\_\_\_\_\_ is also called Swapper.**

- ▶ Swap space
- ▶ Medium term scheduler
- ▶ Short term scheduler
- ▶ Long term scheduler

**ANSWER:** Medium term scheduler

### Section B

Question No: 21 ( M - 2 )

**Write the formula/ procedure for calculating the waiting time in preemptive Shortest Job First scheduling.**

**ANSWER:**

Process	Burst time	Arrival time
P1	21	0
P2	3	1
P3	6	2
P4	2	3

P1	P2	P4	P2	P3	P1	
0	1	3	5	6	12	32

The average waiting time will be  $(5-3) + (6-2) + (12-1) / 4 = 4.25\text{ms}$

Question No: 22 ( M - 3 )

**If a process exits and there are still threads of that process running, will they continue to run?**

**ANS) NO,** When a process exits it takes everything with it this includes the process structure, memory space etc including the threads

Question No: 23 ( M - 5 )

**Considering the Resource sharing feature of thread, what do you think is 'resource sharing' an advantage of a thread or disadvantage of a thread. Explain your answer briefly.**

**ANS)** considering resource sharing an advantage of a thread, mostly threads share the memory and the resources of any process to which they fit in. The advantage of sharing code is that it allows any application to have multiple different thread of activity inside the same address space.