

MID Semester Assignment

Spring 2020

Subject: Operating system Concept

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Section : B

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Q1: The hardware mechanism that enables a device to notify CPU is called an **interrupt**.

Q2: The section of the process control block comprises of page and segments and tables.

Ans: **Scheduling information**

Q3: The system call suspend the calling process.

Ans: **both wait and exit**

Q4: In addressing, the recipient is not required to name the sender.

Ans: **non of the given option**

Q5: command give the snapshot of the current process.

Ans: **PS**

Q6: command to resume the execution of the suspended job in the for ground.

Ans: **job**

Q7: You can use the command to display the status of suspend and background process.

Ans: **fg**

Q8: You can terminate a foreground process by pressing the

Ans: **<ctrl-z>**

Q9: A time sharing system is

Ans: **multitasking**

Q10: the main characteristic of a real time is

Ans: **efficiency**

Q11: shared libraries and kernel modules are stored in

Ans: **/lib**

Q12: scheduler select the process from the job pool and put in main memory.

Ans: **swapper**

Q13: In indirect enter process communication a sender mention the name of the recipient.

Ans: **do**

Q14: A is an integer variable that a part from initialization is accessible only through to standard atomic operation: wait and single

Ans: **criticle section**

Q15: A semaphore that cause busy waiting is termed as

Ans: **spinock**

Q16: The execution of criticle system must not be mutually exclusive

Ans: **false**

Q17: the performance of round robin algorithm does not depend heavily on the size of the time quantum.

Ans: **true**

Q18: The following requirement for solving criticle section problems as known as

Ans: **Mutual Exclusion**

Q19: the critical section problems can be solved by the following except

Ans: **operating system based solution**

Q20: is called swapper

Ans: **Swap space**

Section "B"

Q21: write the formula procedure for calculating the waiting time and preemptive shortest job first scheduling.?

Ans: **Waiting Time** = Total **Waiting Time** / No. of Process = 41 / 5 = 8.2 mills. Total Turnaround **Time** : P1 = 28 + P2 = 7 + P3 = 12 + P4 = 19 + P5 = 3 = 69 mills

Q22: If a process exist and there are still threads of that process running will the continue to run?

Ans: **If** a thread is preempted because the OS scheduler decides to give CPU time to some other thread, then other **threads** in the **process will continue running**

Q23: considering the resource sharing feature of thread do you think is resource sharing an advantage of a thread or disadvantage of a thread explain your answer briefly?

Ans:

Advantages of Thread over Process

1. **Responsiveness**: If the process is divided into multiple threads, if one thread completes its execution, then its output can be immediately returned.

2. **Faster context switch**: Context switch time between threads is lower compared to process context switch. Process context switching requires more overhead from the CPU.

3. **Effective utilization of multiprocessor system**: If we have multiple threads in a single process, then we can schedule multiple threads on multiple processor. This will make process execution faster.

4. **Resource sharing**: Resources like code, data, and files can be shared among all threads within a process.

Note: stack and registers can't be shared among the threads. Each thread has its own stack and registers.

5. **Communication**: Communication between multiple threads is easier, as the threads shares common address space. while in process we have to follow some specific communication technique for communication between two process.

6. **Enhanced throughput of the system**: If a process is divided into multiple threads, and each thread function is considered as one job, then the number of jobs completed per unit of time is increased, thus increasing the throughput of the system.