1. **Which of the following is loosely coupled?**

a. multiprocessor systems

b. single-processor system

c. clustered/Multicomputer systems

d. multi-core processor

1. **Which of the following components of a computer system defines the ways to use system resources to solve computing problems?**

a. computer logo

b. application programs

c. computer hardware

d. operating system

1. **Which of the following programs runs all the time on the computer?**

a. compiler

b. text editor

c. assembler

d. kernel

1. **Which of the following is nonvolatile?**

a. hard-disk drive

b. register

c. main memory

d. cache

1. **Which of the following is the definition of processor?**

a. the basic computation unit of the CPU

b. including multiple computing cores on the same CPU

c. a physical chip that contains one or more CPUs

d. the hardware that executes instructions

1. **Which of the following principles is used for adding and removing items from a queue?**

a. random order

b. last in first out (LIFO)

c. first in first out (FIFO)

d. round robin

1. **Which of the following will trigger an interrupt?**

a. I/O completion

b. software execution

c. kernel function

d. CPU execution

1. **The two separate modes of operating in a system are**

a. user mode and kernel mode

b. kernel mode and privileged mode

c. supervisor mode and system mode

d. physical mode and logical mode

1. **Which of the following principles is used for adding and removing items from a stack?**

a. first in first out (FIFO)

b. last in first out (LIFO)

c. round robin

d. random order

1. **Which of the following storage medium is the slowest regarding access speed?**

a. register

b. cache

c. main memory

d. solid state drive

1. **Including the initial parent process, how many processes are created by the program shown in the following Code? …int main(){fork(); fork(); fork(); fork();return 0;}**

a. 12

b. 8

c. 16

d. 4

1. **Message passing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

a. kernel required multiple times when establishing the shared region

b. requires only once system call, consume the kernel

c. kernel only required once when establishing the shared region

d. requires a lot of system call, consume the kernel

1. **The list of processes waiting to execute on a CPU is called a \_\_\_\_.**

a. device queue

b. ready queue

c. standby queue

d. interrupt queue

1. **The \_\_\_\_\_\_\_\_ application is the application appearing on the display screen of a mobile device.**

a. background

b. display

c. main

d. foreground

1. **Which of the following IPC mechanism is easier to implement in a distributed system?**

a. shared memory

b. socket communication

c. ordinary pipe

d. message passing

1. **If parent terminated without invoking wait, process is a/an \_\_\_\_\_\_\_\_\_**

a. Interrupter

b. zombie

c. synchronizer

d. orphan

1. **Which of the following selects from among the processes that are in the ready queue to execute and allocate the CPU to one of them?**

a. context switch

b. swapping

c. job scheduler

d. CPU scheduler

1. **Which of the following process state will be switched from “ready” state?**

a. ready

b. running

c. waiting

d. terminated

1. **\_\_\_\_\_\_\_ is the location of instruction to next execute.**

a. CPU register

b. CPU scheduling

c. Process

d. Program counter

1. **If process P0 is switched to process P1, state for P0 will be saved into \_\_\_\_, and state from \_\_\_ will be reloaded?**

a. PCB0, PCB1

b. PCB0, PCB0

c. PCB1, PCB0

d. PCB1, PCB1

1. **The order in which a CPU's scheduled processes are executed is determined by a CPU-scheduling algorithm. How many distinct schedules are possible for a single processor with 5 scheduled processes?**

A. 80

B. 25

C. 10

E. 120

Suppose that the following processes arrive for execution at the times indicated. Each process will run for the amount of time listed. In answering the questions, use **nonpreemptive** scheduling, and base all decisions on the information you have at the time the decision must be made. What is the average turnaround time (ATaT) and average waiting time (AWT) for these processes with the FCFS scheduling algorithm?

A. **ATaT ≈ 10.5, AWT ≈ 6.2**

B. **ATaT ≈ 4.8, AWT ≈ 1.8**

C. **ATaT ≈ 6.8, AWT ≈ 3.8** D. **ATaT ≈ 7.2, AWT ≈ 2.9**