Which is a main function of an Operating System among the following? Select one or more.

a. *Resource Management -Correct :OS manages the computer's resources like the central processing unit, memory, disk drives, and other I/O devices*
b. *File Management -Correct :OS keeps track of where information is stored, user access settings and status of every file etc.*
c. *Networking -Wrong : This is not considered a main function of an OS. It is handled by various networking devices.*
d. *Processor Management -Correct :OS decides which process has access to the processor and how much time it will allocate for that certain process. This is known as process scheduling.*

What are the responsible services of a kernel I/O subsystem?

a. *Buffering -Correct :Kernel I/O Subsystem keeps a memory area called as buffer which stores data while they are transferred between two devices or between a device with an application operation.*
b. *Scheduling -Correct : Kernel schedules a set of I/O requests to determine a good order in which to execute them.*
c. *Spooling -Correct : A spool is buffer for an output device which can't accept interleaved data streams. Kernel I/O subsystem handles spooling is some OSs.*
d. *Caching -Correct : Kernel keeps cache memory that is region of fast memory which holds copies of data.*
e. *All of above -Correct :Since all a,b,c,d are correct this is the expected answer.*

What statement(s) is/are true regarding Command Line Interpreter(CLI)?

a. *CLI allows direct command entry -Correct: CLI doesn't need any GUI to run.*
b. *Only implemented in kernel -Wrong :Sometimes it is implemented by systems program.*
c. *Sometimes multiple flavors implemented – Correct :They are called shells.*
d. *Primarily fetches a command from user and execute it -Correct :This is used for faster execution, but user must enter the correct command.*

What is correct regarding system calls?

a. *It's the programming interface to the services provided by the OS -Correct :A system call is the programmatic way in which a computer program requests a service from the kernel of the operating system it is executed on*
b. *System call routines of an OS are mostly written in Java -Wrong :They are typically written in a high-level language like C or C++*
c. *A system call is a way for programs to interact with the operating system -Correct : A computer program makes a system call when it makes a request to the operating system's kernel.*
d. *System calls give services of the OS to the user programs through Application Program Interface(API) -Correct :It gives an interface between a process and OS to allow user-level processes to request services of the operating system.*

Choose the advantages of a monolithic kernel.

a. *Execution is fast -Correct :It is a single large process running entirely in a single address space.*
b. *Failure of a single service is not a big issue -Wrong :Entire system crashes when this happens*
c. *Adding a new service is easier -Wrong :User has to modify the entire OS.*
d. *No need of adding extra mechanisms for handling I/O and process :This type of kernels provides large number of functions in one level such as CPU scheduling, memory management, file management etc.*

What is true regarding processes?

a. *Process is a program in execution -Correct :This is how process is defined.*
b. *Program counter, stack, heap are parts of a process -Correct: PC keeps track of current activity of a process, stack is to keep temporary data like function parameters and local variables, heap is for memory allocated dynamically during runtime.*
c. *Process is a passive entity -Wrong :Process is active, it's the program which is considered a passive entity.*
d. *One program can be several processes -Correct :Consider multiple users executing the same program*

A running process can change its state to

a. *New -Wrong :This state occurs only in the beginning of a process.*
b. *Ready -Correct :If scheduler interrupts and assigns another process to the processor this can happen.*
c. *Waiting – Correct :If it needs to wait for a resource, such as waiting for user input, or waiting for a file to become available this can happen.*
d. *Terminated – Correct :When the process finishes execution, it moves to this state.*

What is the correct android process importance hierarchy?

a. *Empty > Visible> Service> Background> Foreground -Wrong :First and last should change their places*
b. *Foreground> Service> Visible > Background> Empty -Wrong :Service processes are not more important than visible processes*
c. *Foreground> Visible> Service> Background> Empty -Correct :This is the order in which termination of processes happens in android*
d. *Foreground> Background > Service> Visible> Empty -Wrong :Background and visible processes should switch their places*

Which of the following is/are not shared by threads?

a. *Program counter -Correct :Each thread has its separate PC*
b. *Stack -Correct :Each thread has its separate stack*
c. *Code ,Data ,Files -Wrong :In multithreaded processes these things are shared by threads*
d. *Both a and b -Correct :Since a and b both are correct this is the expected answer*

What are the benefits of multithreaded architecture?

a. *Responsiveness -Correct :May allow continued execution if part of process is blocked, especially important for user interfaces*
b. *Resource Sharing -Correct :Threads share resources of process, easier than shared memory or message passing*
c. *Economy -Correct :Cheaper than process creation, thread switching lower overhead than context switching*
d. *Scalability -Correct :Process can take advantage of multicore architectures*