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Question: 1

An example of a module exhibiting temporal cohesion is a combination of-----

- A. the control and management of two onboard hardware clocks
- B. a 40 millisecond periodic navigation function and a 40 millisecond periodic display update function
- C. several mathematical functions such as the sine, cosine, and arctangent functions
- D. the vehicle speed and acceleration management functions

Answer: B

Question: 2

What two actions must occur in systems that use overlaying with a disk drive backing store? (Choose Two.)

- A. Only data is stored on the disk and code is stored in RAM.
- B. A task executing in RAM can also execute code that is stored on the disk.
- C. The operating system must prevent each task in RAM from accessing RAM outside the area reserved for it.
- D. The code for the currently executing tasks is stored in RAM and that for the currently inactive tasks is stored on the disk, as managed by the operating system.

Answer: C,D

Question: 3

Which two statements about static memory allocation are true? (Choose two.)

- A. Garbage collection is not required.
- B. Memory fragmentation does not occur.
- C. Memory allocation units are always the same fixed size.
- D. Tasks must inform the run-time (e.g., operating system) the total amount of memory they will need before they begin requesting memory.

Answer: A,B

Question: 4

POSIX -----

- A. is the same as UNIX
- B. is not designed for real-time systems
- C. does not support asynchronous I/O
- D. is an operating system interface standard

Answer: D

Question: 5

A scheduler runs tasks to completion instead of pre-empting tasks by time slicing or according to priority.

What two actions will occur? (Choose two.)

- A. Maximize the number of completed tasks per unit of time
- B. Minimize the task scheduling and context switching overheads
- C. Honor the commitment made to complete the task once it has begun executing
- D. Share the processor time fairly among ready tasks

Answer: B,C

Question: 6

Which two statements are true of a monitor for synchronization? (Choose two.)

- A. No concurrent access by tasks is allowed to any resource(s) within a monitor.
- B. One monitor may encapsulate any number of resources and their synchronization functions.
- C. If a requesting task enters a monitor but finds the resource isn't available, the task exits the monitor and is placed at the end of the monitor's external queue.
- D. If two tasks are waiting in a monitor's queues for separate resources, when the task that has been accessing a resource finishes doing so, all the queues with waiting tasks are served round-robin.

Answer: A,B

Question: 7

Which two are POSIX real-time extensions? (Choose two.)

- A. suspend / resume API's
- B. direct cyclic executive support

- C. task synchronization
- D. priority-based preemptive task scheduling

Answer: C,D

Question: 8

Which two of these techniques would successfully avoid mutual exclusion deadlocks? (Choose two.)

- A. Set up a circular dependency of tasks and resources
- B. Allow a task's use of a resource to be pre-empted
- C. Require tasks to acquire and use only one resource at a time
- D. Require tasks to acquire resources in order of the tasks' priorities

Answer: B,C

Question: 9

The priority of a runnable task blocked on a resource request is temporarily changed to be the same as the priority of another task. Which two phrases could describe the new priority? (Choose two.)

- A. The priority of the highest priority task
- B. The priority of the lowest priority task which uses the resource
- C. The priority of the higher priority task being blocked by the lower priority one
- D. The ceiling priority of the resource on which the lower priority task is blocked

Answer: C,D

Question: 10

What two results occur by changing priorities dynamically? (Choose two.)

- A. Reduces overhead
- B. Increases overhead
- C. May starve lower priority tasks
- D. Avoids the need for priority queues

Answer: B,C

Question: 11

A representative benchmark differs from a synthetic benchmark in that a-----

- A. representative benchmark models a representative ideal application
- B. synthetic benchmark precisely predicts specific application performance
- C. representative benchmark models a real application's execution characteristics
- D. synthetic benchmark must be developed by the same team that will build the application

Answer: C

Question: 12

Network protocol models are described as layers that-----

- A. permit separation of concerns of lower layers (e.g., hardware) from higher layers (e.g., application)
- B. add increasing efficiency to higher layers (e.g., application) than lower layers (e.g., hardware)
- C. are highly consistent in number and function among different protocols
- D. provide efficient application access to network hardware addresses

Answer: A