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**Exam : UM0-401**

**Title : Omg OCRES-Intermediate  
Exam**

**Version : DEMO**

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**

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: CD**

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: AB**

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**

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: BC**

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: AB**

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: CD**

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:** BC

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:** CD

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:** BC

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

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**

13. The primary requirement for an RTOS is to \_\_\_\_\_.

- A. maximize application speed and minimize memory utilization
- B. enable fast control and data transfer to critical system devices
- C. enable the application to meet both its functional and temporal requirements
- D. permit the application to efficiently access all resources (e.g., I/O and memory)

**Answer: C**

14. A strictly conforming POSIX application \_\_\_\_\_.

- A. uses all POSIX functions and standard options
- B. uses only IEEE tested conforming operating systems
- C. uses only POSIX required API's for its OS functionality
- D. runs on all operating systems whose vendors claim POSIX conformance

**Answer: C**

15. Which statement accurately describes where a "mark" exists in the MDA model hierarchy?

- A. as part of the PSM
- B. as part of the PIM
- C. as part of a transparent layer placed over a PIM
- D. as part of a transparent layer placed over a PSM

**Answer: C**

16. In MDA practice, transformations from PIM to PSM \_\_\_\_\_. (Choose TWO.)

- A. may be automated
- B. are required for all systems
- C. may be hand generated
- D. always produce executable code
- E. are always implemented in the QVT action language

**Answer: AC**

17. What does the term "Platform independence" mean?

- A. The application model can be moved to every other platform that is available.
- B. The application model is independent of the features of any particular platform from some class of platforms.
- C. The application is written in a high-level programming language such as Java or C++.
- D. The application model is independent of the hardware platform where the application may be deployed.

**Answer: B**

18. What is an "implementation model"?

- A. A PIM that provides all of the information needed to construct a system and put it into operation.
- B. A model that includes C++ source code for all classes in the model.
- C. A PSM that provides all of the information needed to construct a system and put it into operation.
- D. A file that is executable on some computer system.

**Answer: C**

19. What two functions does the Model transformation specification provide? (Choose TWO.)

- A. Always prescribes a one-to-one mapping from input model elements to output model elements.
- B. Prescribes the transformations that merge a set of models to produce another set of models.
- C. Are implemented using the OMG standard Model Transformation language.
- D. Prescribes the transformation of one model to another model.

**Answer: BD**

20. A metamodel is a \_\_\_\_\_.

- A. set of UML templates for drawing system models
- B. special kind of model that specifies a modeling language
- C. collection of stereotypes and classes that define a set of architectural patterns
- D. conceptual pattern for a class of application systems

**Answer: B**