

Course No: **ESGD4115**  
Course Title: **Concurrent and  
real-time programming**  
Date: **26 /03/ 2012**  
No. of Questions: **3**  
Time: **1 hr**  
Using Calculator **(No)**

University of Palestine



Midterm Exam  
**Second term 2011/2012**  
Total Grade: **20**

Instructor: **Eng. Mohammed Timraz**  
Student No.: \_\_\_\_\_  
Student Name: \_\_\_\_\_  
College Name: **Eng. College**  
Dep. / Specialist: **Software Engineering**

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### First Question

(7)

For each of the following statements state whether it is true or false:

1. In Java, priorities given to threads are also imposed on the underlying scheduler when allocating resources. (        )
  2. A relative delay allows a thread to wait for a specified time. (        )
  3. If the created thread is not added to a thread group then it is not a member of any thread-group. (        )
  4. The Runnable objects can use threads from the thread pool directly. (        )
  5. Nonsynchronized methods can not be accessed by more than one thread at the same moment. (        )
  6. Interference may occur where each concurrent activity is waiting for another to perform an operation. (        )
  7. Threads that are not visible to the operating system are called Green threads. (        )
  8. The run method calls the start method when executed. (        )
  9. The methods of a class that are labelled as synchronized can only be executed when they have acquired their object's lock.
  10. Terminating a thread using the stop method gives the thread no chance to clean up. (        )
  11. The wait method always blocks the calling thread and releases the lock associated with the object. (        )
  12. When the method notify is called it wakes up the waiting thread and release the lock and give it to the notified thread. (        )
  13. A quantity semaphore can be used for mutual exclusion. (        )
  14. A persistent signal remains set until a single thread has received it. (        )
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## Second Question

(6)

Choose the right answer:

- 1) The InterruptedException is thrown when:
    - (a) An attempt is made to destroy a nonempty thread group.
    - (b) A thread that has made a wait method call is woken up by the thread being interrupted.
    - (c) A notifyAll methods is called by a thread that has not locked the associated object
    - (d) Both (b) and (c).
  - 2) some of the possible states for a threads are:
    - (a) BLOCKED or NEW.
    - (b) DELETED or NOTIFIED.
    - (c) RUNABLE or WAITING.
    - (d) Both (a) and (b).
    - (e) Both (a) and (c).
  - 3) In Soft real-time systems:
    - a) it is absolutely important that responses occur within the specified deadline
    - b) Response times are not important and there are no explicit deadlines.
    - c) Response times are important, but the system will still function correctly if deadlines are missed.
  - 4) to allow mutually exclusive access to static data:
    - (a) The class object lock must be obtained when accessing static data.
    - (b) Data is accessed through a static method with the synchronized modifier only.
    - (c) The Class object is identified in a synchronized block statement.
    - (d) (a) Or (b) or (c) can be applied.
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