NPTEL Online Certification Courses

Indian Institute of Technology Kharagpur

PROGRAMMING IN JAVA

Assignment6

TYPE OF QUESTION: MCQ

Number of questions: 10 **Total mark: 10 × 1 = 10**

QUESTION 1:

Which of the following is NOT a method of the Thread class in Java?

a. `isInterrupted()`
b. `interrupt()`
c. `joins()`
d. `sleep()`

Correct Answer: c

Detailed Solution:

join() is a method in the pre-defined Java class Thread but not joins(). Other methods like `isInterrupted` (),`interrupt` () and sleep() are defined in the Thread class.

QUESTION 2:

Which of the following statement(s) is/are true?

a. **`public int getId():`** returns the id of the thread.
b. **`public boolean isAlive():`** tests if the thread is alive.
c. **`public void interrupt():`** interrupts the thread.
d. **`public boolean isInterrupted():`** tests if the thread has been interrupted.

Correct Answer: a,b,c,d

Detailed Solution:

All options are correct.

QUESTION 3:

Which of the following can be used to create an instance of Thread?

a. By implementing the Runnable interface.
b. By extending the Thread class.
c. By creating a new class named Thread and calling method run ().
d. By importing the Thread class from package.

Correct Answer: a, b

Detailed Solution:

An application that creates an instance of Thread must provide the code that will run in that thread. There are two ways to do this:

- *Provide a Runnable object.* The Runnable interface defines a single method, run, meant to contain the code executed in the thread. The Runnable object is passed to the Thread constructor
- *Subclass Thread.* The Thread class itself implements Runnable, though its run method does nothing. An application can subclass Thread, providing its own implementation of run

Reference:https://docs.oracle.com/javase/tutorial/essential/concurrency/runthread.html

QUESTION 4:

What is the output of the following program?

```
public class Question
    {
     public static void main(String[] args) {

          try {
              int a=5/0;

          } catch (Exception e) {

              catch (ArithmeticException a) {

          }

          }
            System.out.println("Hello World");
      }
}
```

a. Hello World
b. 5
c. Compile time error
d. ArithmeticException

Correct Answer: c

Detailed Solution:

This first handler catches exceptions of type Exception; therefore, it catches any exception, including ArithmeticException. The second handler could never be reached. This code will not compile.

QUESTION 5:

Which one of these keywords must be used to handle the exception thrown by try block in some rational manner?

a. try
b. finally
c. throw
d. catch

Correct Answer: d

Detailed Solution:
The catch block is responsible for handling the exceptions raised by try block.

QUESTION 6:

Assume the following method is properly synchronized and called from a thread A on an object B: wait(2000); After calling this method, when will the thread A become a candidate to get another turn at the CPU?

a) After thread A is notified, or after two seconds.
b) Two seconds after thread A is notified.
c) After the lock on B is released, or after two seconds.
d) Two seconds after lock B is released.

Answer : **a**

Explanation: Either of the two events (notification or wait time expiration) will make the thread become a candidate for running again

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QUESTION 7:

The following is a simple program using the concept of thread.

```
public class Question extends Thread{
 public void run(){
  for(int i=1;i<5;i++){

    System.out.println(i++);
  }
 }
 public static void main(String args[]){
    Question t1=new Question();
    t1.run();

 }
}
```

What is the output of the above program?

a. 1
   3
b. 1
   2
   3
   4
c. Runtime error
d. 1
   2

Correct Answer: a

Detailed Solution: Run to see the output.

QUESTION 8:

For the program given below, what will be the output after its execution?

```
public class Main{
public static void main(String[]args){
        Thread thread=Thread.currentThread();
        System.out.println(thread.activeCount());
       }
}
```

a. 0
b. true
c. 1
d. false

Correct Answer: c

Detailed Solution:

java.lang.Thread.activeCount() : Returns an estimate of the number of active threads in the current thread's thread group and its subgroups.

QUESTION 9:

Which of the following is a correct constructor for a thread object?

a. `Thread(Runnable a, String str);`
b. `Thread(Runnable a, int priority);`
c. `Thread(Runnable a, ThreadGroup t);`
d. `Thread(int priority);`

Correct Answer: a

Detailed Solution:

`Thread(Runnable a, String str)` creates a new Thread object. The others are not valid constructors to create a thread object.

QUESTION 10:

Which of these keyword(s) is used to manually throw an exception?

a. try
b. finally
c. throw
d. catch

Correct Answer: c

Detailed Solution:
The throw keyword is used to manually throw an exception.

**************END**************