| جامعة العلوم والتقانة |
| كلية علوم الحاسوب وتقانة المعلومات |
| بكلاريوس علوم الحاسوب |
| بكلاريوس تكنولوجيا المعلومات و الإتصالات |

إمتحانات نهاية الفصل للعام 2017-2018
السنة **الثالثة** الفصل **الخامس** الدفعة 2015/2016
المقرر : البرمجة بلغة جافا

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الزمن 3: ساعات

الإسم .... الرقم ....

أجب عن جميع الأسئلة
ورقـة الإمـتحان تشـتمل علـى 7 صفـحـات

Question 1 :

Draw a circle around the correct answer

1. Using a bubble sort involves _____.
      a. comparing parallel arrays
      b. comparing each array element to the average
      c. comparing each array element to the adjacent array element
      d. swapping every array element with its adjacent element

2. When you use a bubble sort to perform an ascending sort, after the first pass through an array the largest value is _____.
      a. at the beginning of the list
      b. in the middle of the list
      c. at the end of the list
      d. It is impossible to determine the answer without more information.

3. When array elements are objects, you usually want to sort based on a particular _____ of the object.
      a. field   b. method
      c. name   d. type

4. The following defines a _____ array:
         int[][]nums = {{1, 2}, {3, 4}, {5, 6}};
      a. one-dimensional   b. two-dimensional
      c. three-dimensional   d. six-dimensional

5. A _____ array has rows of different lengths.
      a. ragged   b. jagged
      c. haggard   d. tattered

6. Which of the following is a requirement when you use a binary search method with an array?
      a. The array must be numeric.
      b. The array must have been sorted in ascending order.
      c. The array must have at least three elements.
      d. none of the above

7. The chief advantage to using the ArrayList class instead of the Arrays class is that an ArrayList _____.
      a. can be much larger   b. is easier to search
      c. is dynamically resizable   d. can be used as an argument to a static method

8. Employing inheritance reduces errors because _____.
      a. the new classes have access to fewer data fields
      b. the new classes have access to fewer methods
      c. you can copy methods that you already created
      d. many of the methods you need have already been used and tested

9. A base class can also be called a _____.

      a. child class   b. subclass

      c. derived class   d. superclass

10. The Java keyword that creates inheritance is _____.

      a. static   b. enlarge

      c. extends   d. inherits

11. When a subclass method has the same name and argument types as a superclass method, the subclass method _____ the superclass method.

      a. overrides   b. overuses

      c. overloads   d. overcompensates

12. You use a _____ method access specifier when you create methods for which you want to prevent overriding in extended classes.

      a. public   b. protected

      c. final   d. subclass

13. Parent classes are _____ than their child classes.

      a. less specific   b. more specific

      c. easier to understand   d. more cryptic

14. Abstract classes differ from other classes in that you _____.

      a. must not code any methods within them

      b. must instantiate objects from them

      c. cannot instantiate objects from them

      d. cannot have data fields within them

15. Abstract classes can contain _____.

      a. abstract methods   b. nonabstract methods

      c. both of the above   d. none of the above

16. In object-oriented programming terminology, an unexpected or error condition is a(n) _____.

      a. anomaly   b. aberration

      c. deviation   d. exception

17. Which of the following statements is true?

      a. Exceptions are more serious than Errors.

      b. Errors are more serious than Exceptions.

      c. Errors and Exceptions are equally serious.

      d. Exceptions and Errors are the same thing.

18. The segment of code that handles or takes appropriate action following an exception is a _____ block.

      a. try   b. catch

      c. throws   d. handles

19. When a try block does not generate an Exception and you have included multiple catch blocks, _____.

      a. they all execute

      b. only the first one executes

      c. only the first matching one executes

      d. no catch blocks execute

20. The memory location where the computer stores the list of method locations to which the system must return is known as the _____.

      a. registry   b. call stack

      c. chronicle   d. archive

Question 2 :

Fill in the blanks with the correct term or word

1. When a two-dimensional array has rows of different lengths, it is a **………………..** **array** because you can picture the ends of each row as uneven.

2. The general term for arrays with more than one dimension is **………………………………..……..** **arrays.**

3. Java provides an **……………………………..……..** , which contains many useful methods for manipulating arrays.

4. A programmer created data type with a fixed set of values is a **………………………………..……..** .

5. The three types of methods that you cannot override in a subclass are: **…………………………** **methods,** **…………………………** **methods and** **…………………………** **within final classes.**

6. A class such as Employee that you create only to extend from is not a concrete class; it is an **…………………………** class.

7. The code within a **…………………………** **block** executes regardless of whether the preceding try block identifies an Exception.

8. When you use inheritance, you **……………** time and **………………** errors.

Question 3 :

1. Create a class named Book that contains data fields for the title and number of pages. Include get and set methods for these fields. Next, create a subclass named Textbook, which contains an additional field that holds a grade level for the Textbook and additional methods to get and set the grade level field. **Write an application that demonstrates using objects of each class.**

2. **Write an application that throws and catches an ArithmeticException** when you attempt to take the square root of a negative value. Prompt the user for an input value . The application either displays the square root or catches the thrown Exception and displays an appropriate message.

3. Suppose you want to create classes to represent different animals, such as Dog and Cow. You can create a generic abstract class named Animal so you can provide generic data fields, such as the animal's name, only once. An Animal is generic, but all specific Animals make a sound; the actual sound differs from Animal to Animal. If you code an empty speak() method in the abstract Animal class, you require all future Animal subclasses to code a speak() method that is specific to the subclass. **Read the previous scenario carefully and write the application that represents the previous scenario.**

Question 4 :

Write True (T) or False(F) for each of the following statements.

1. (………..) The Error class represents less serious errors from which your program usually cannot recover.
2. (………..) The Exception class comprises more serious errors that represent unusual conditions that arise while a program is running.
3. (………..) Java's creators could predict every condition that might be an Exception in your applications.
4. (………..) Most organizations have specific rules for exceptional data
5. (………..) To create your own throwable Exception, you must extend a subclass of Throwable.
6. (………..) An assertion is a Java language feature that can help you detect such syntax errors and debug a program.
7. (………..) The Boolean expression in the assert statement should always be true if the program is working correctly.
8. (………..) The default constructor creates an ArrayList with a capacity of 100 items.
9. (………..) Inheritance is a one-way proposition; a child inherits from a parent, not the other way around.
10. (………..) Object-oriented programmers use the term polymorphism when discussing any operation that has only one meanings.

Question 5 :

Define the following terminologies

1. Unified Modeling Language (UML)

………………………………………………………………………………………………………
………………………………………………………………………………………………………
………………………………………………………………………………………………………

2. Two-dimensional arrays

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3. Information hiding

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4. Virtual classes

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5. Overriding Superclass Methods

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