

..... الاسم ..... الرقم .....

أجب عن جميع الأسئلة

\*ورقة الإمتحان تشتمل على 7 صفحات\*

**Question One: Draw a circle on the correct answer**

- Which of the following is a correct call to a method declared as public static void aMethod (char code)?
  - void a Method();
  - void a Method("V");
  - a Method(char 'M');
  - a Method('Q');
- What does the following program segment output?

```
int d = 0;
do
{
System.out.print(d + " ");
d++;
} while (d < 2);
```

  - 0
  - 0 1
  - 0 1 2
  - Nothing
- If a class is named Student, the class constructor name is \_\_\_\_\_.
  - any legal Java identifier
  - any legal Java identifier that begins with S
  - StudentConstructor
  - Student
- The keyword final used with a variable declaration indicates \_\_\_\_\_.
  - the end of the program
  - a static field
  - a symbolic constant
  - that no more variables will be declared in the program
- Which of the following data types can store a value in the least amount of memory?
  - short
  - long
  - int
  - byte
- If you create a class that contains one method, and instantiate two objects, you usually store \_\_\_\_\_ for use with the objects.
  - one copy of the method
  - two copies of the method
  - two different methods containing two different this references
  - data only (the methods are not stored)

7. The values of an object's attributes also are known as its \_\_\_\_\_.
- a. state
  - b. orientation
  - c. methods
  - d. condition
8. The concept of allowing a class's private data to be changed only by a class's own methods is known as \_\_\_\_\_.
- a. structured logic
  - b. object orientation
  - c. information hiding
  - d. data masking
9. If you create two String objects:
- ```
String name1 = new String("Jordan");
String name2 = new String("Jore");
```
- then name1.compareTo(name2) has a value of \_\_\_\_\_.
- a. true
  - b. false
  - c. -1
  - d. 1
10. If you use the automatically supplied default constructor when you create an object, \_\_\_\_\_.
- a. numeric fields are set to 0 (zero)
  - b. character fields are set to blank
  - c. Boolean fields are set to true
  - d. All of these are true.

**Question two: Write ( T ) behind the correct sentence and ( F ) behind the false sentence:**

1. The created Scanner object is connected to the default input device [     ]
2. Encapsulation refers to the hiding of data and methods within an object [     ]
3. A compiler executes each program statement as soon as it is translated [     ]
4. If an object's methods are well written, the user is must aware of the low-level details of how the methods are executed [     ]
5. Any class can contain an unlimited number of methods, and each method can be called an unlimited number of times. [     ]
6. Static methods in a class are called instance methods [     ]
7. An object name is a reference; it holds a memory address. [     ]
8. constructor you write must have the same name as the class it constructs, and constructors have a return type [     ]
9. A class's instance variables override locally declared variables with the samenames that are declared within the class's methods. [     ]
10. A class describe what attributes its objects will have and what those objects will be able to do [     ]

**Question three :**

1. Write java application named **OddArray**. which you will assign a value entered by a user at the keyboard that contain **5** elements and then the application Display the Odd numbers.

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**2. Complete the table below :**

| Method Name        | Functionality                                                    | Example                                                                                                                                            | Output      |
|--------------------|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| capacity()         |                                                                  | <pre>Stringbuilder sb = new Stringbuilder("Ahmed") System.out.println(sb.capacity());</pre>                                                        |             |
| toLowerCase(Char)  |                                                                  |                                                                                                                                                    | aChar = 'h' |
| equals(String)     |                                                                  | <pre>String str1 = "Carmen"; String str2= "carmen"; If (str1.equals(str2)) System.out.println("Same"); else System.out.println("Different");</pre> |             |
| replace(Char,Char) | Replaces all the occurrences of a character with the given Char. | <pre>String str = "XXYXBNAX"; System.out.print(str.replace('X', '1'));</pre>                                                                       |             |
| charAt(int)        |                                                                  | <pre>Stringbuilder text = new Text Stringbuilder("Programming"); char letter = text.charAt(5);</pre>                                               |             |

**Question four:**

1. Select a number of the correct term from the list (C) and put it in the list (A) to be matching With the list (B).

| List A | List B                                                                                                                   | List C                        |
|--------|--------------------------------------------------------------------------------------------------------------------------|-------------------------------|
|        | The .....of a StringBuilder object is the actual length of the buffe                                                     | 1) String class               |
|        | A hypothetical (software-based) computer on which Java runs.                                                             | 2) Java interpreter           |
|        | Support character output to a computer screen in a DOS window.                                                           | 3) Inheritance                |
|        | working with fixed data—that is, unchanging data composed of multiple characters                                         | 4) run-time error             |
|        | the ability to create classes that share the attributes and methods of existing classes, but with more specific features | 5) Console applications       |
|        | occur when you use a correct word in the wrong context in program code                                                   | 6) Source code                |
|        | Consists of programming statements written in a high-level programming language.                                         | 7) capacity                   |
|        | Occurs when a program compiles successfully but does not execute.                                                        | 8) Java Virtual Machine (JVM) |
|        | forces a value of one data type to be used as a value of another type.                                                   | 9) Semantic errors            |
|        | a program that checks bytecode and communicates with the operating system,                                               | 10) Type casting              |

2. For each of the following problems, write a java program or a program segment that performs the specified action.

**Problem (1):**Create a java class named **Pizza**. Content three Data fields name (String), quantity (int), and price (double)

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**Problem (2):** Modify the class from Coding **Problem (1)** Create **setData()** method to set the values for each fields

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**Problem (3):** Modify the class from Coding **Problem (2)** to include a **show()** method to print price.

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**Problem (4):** Declare a class named **TestPizza** to use the capabilities of your new **Pizza** class and declare a main method that creates an instance of class **Pizza**.

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**Problem (5):** Add statements to the main method of Coding **Problem (4)** that prompts the user for and accepts values for the name, quantity , and price for the instance of class **Pizza**, and Then calls the **setData()** and **show()** methods

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**Question five:**

**1. Read a blow program carefully then answer the following questions :**

```
public class Variable
{
public static void main(String[] args)
{
int aNumber = 10;
System.out.println("aNumber is " + aNumber);
firstMethod();
System.out.println(" aNumber is " + aNumber);
secondMethod(aNumber);
System.out.println("aNumber is " + aNumber);
}
public static void firstMethod()
{
int aNumber = 77;
System.out.println("In firstMethod(), aNumber is "+ aNumber);
}
public static void secondMethod(int aNumber)
{
System.out.println("In secondMethod(), at first "+"aNumber is " + aNumber);
aNumber = 862;
System.out.println("In secondMethod(), after an assignment "+"aNumber is " + aNumber);
}}
```

I. What is the output from above program اوجد المخرج من البرنامج السابق

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II. Explain the basic concepts of OOP in above program وضح و اشرح مفهوم البرمجة الموجهة الاساسي الذى يجسده هذا البرنامج

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III. Why did we call firstMethod() method by the method name only?

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2. Discussed the following program (using line numbers) and Show the output.

اشرح باختصار جمل البرنامج التالي حسب الترقيم الموضح ثم وضع المخرج من البرنامج

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <pre>1. public class BaseballPlayer 2. { 3.     private static int count = 0;        private int number;        private double Average; 4.     public BaseballPlayer(int id, double avg) 5.     {        number = id;        Average = avg; 6.     count += 1;        }        public void showPlayer()        { 7.     System.out.println("Player " + number + "        batting average is " + Average + " There are "        + count + " players");        }        }</pre> | <pre>public class TestPlayer { public static void main(String[] args) { 8.     BaseballPlayer Ali = new BaseballPlayer(12, .218);        BaseballPlayer Omer = new BaseballPlayer(31, .385); 9.     Ali.showPlayer();        Omer.showPlayer();        BaseballPlayer kamal = new BaseballPlayer(44, .505);        kamal.showPlayer();        kamal.showPlayer();        }        }</pre> |
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2. ....  
3. ....  
4. ....  
5. ....  
6. ....  
7. ....  
8. ....  
9. ....

**Output:**

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