

Quiz1


```

int x = 9, y = -3, z = 4;
double n1 = 2.668, n2;
char ch1 = 'A', ch2 = 'b'; // Unicode of A is 65 and b is 98
String str1 = "Quiz Test", str2 = "6";

```

Expression	Error?	Result (if no error)
$10 \% 10 / 3 + (-3) * (-2)$	no	6.9 -0.25
<code>n2 = ++x % x / 3 + y ++ * -2;</code>	no	fales
<code>!(ch1 <= ch2) true && (x <= -y)</code>	error	Integer.parseInt
<code>System.out.print((int)str2 > z);</code>	error	-0.75
<code>System.out.print(str2 + z * 2);</code>	no	'A Quiz' ~ ~ ~ 4 -0.25
<code>System.out.printf("\'%c %s\'%3d %n", ch1, str1.substring(0, z+1), z);</code>	error	
<code>str2.charAt(1)</code>	no	~ ~ ~ 9.7 -0.25
<code>System.out.printf("%7.1f%n", str1.indexOf("Test") + n1);</code>		

Q2: Write java statements to perform the following: (4 pt)

a) Declare constant **flag** of type Boolean and assign **True** to it.

`final boolean FLAG = true;`

b) Convert the following mathematical equation to a java expression $\frac{y \times z}{z \times x^2} + W$

`y * z / (z * x * x) + W`
-0.25

c) Assume you have variables **price** and **total** declared and initialized, in one statement assign **price** value to **total**, then decrease **price** by 1.

`total = 2 * price --`

Mid1

Q1: Multiple-choice: select the correct answer: (Total 3)

<p>1. What will be the value of a after the following statement?</p> <pre>int a; int b = 1; a = 5 * 4 + (--b) - (9 / b);</pre> <p><i>0 - 9/0</i></p>	<p>a. 12</p> <p><input checked="" type="radio"/> b. run time error</p> <p>c. 21</p> <p>d. Compilation error</p>
<p>2. Which of the following statements will produce the following output for variable PI?</p> <p>PI='3.14'</p>	<p>a. System.out.printf("PI=%f",pi); ✗</p> <p><input checked="" type="radio"/> b. System.out.printf("PI=%' %1.2f%' ",pi); ✗</p> <p><input checked="" type="radio"/> c. System.out.printf("PI=' %1.2f' ", PI); ✓</p> <p>d. System.out.printf("PI=' %1.2f' ", PI);</p>
<p>3. Assume you have the following string "To Be Or Not To Bee" saved in variable s, the method _____ returns a new string "to Be Or Not to Bee".</p>	<p><input checked="" type="radio"/> a. s.replace('T', 't')</p> <p>b. s.toLowerCase(s)</p> <p>c. s.replace('t', 'T')</p> <p>d. s.toLowerCase()</p>
<p>4. The JVM (Java Virtual Machine) translates the source code (with extension ".java") into a bytecode (with extension ".class")</p>	<p>a. True</p> <p><input checked="" type="radio"/> b. False</p>

Q2: What is the output for the following code segments (Please use ~ to represent space, extra output -0.25)? (Total 4)

code	Input value	Output
a. switch (num%5){ case 0: --num; case 1: num=num>4?10:2<5?20:30; break; case 2: num++; case 3: num*=2; default: num--; } System.out.println("num="+num);	int num = 5;	num = 2 num = 20 -0.25
	int num = 44;	num = 43
	int x=1; boolean y=false;	inside else x=2 y=false x=2 y=false x=2 y=false
	int x=2; boolean y=true;	inside else x=3 y=true
b. if (x++>=1) ~ if (x>1 && !y) ~ System.out.println("inside third if"); if (x>3) ~ System.out.println("inside else"); else y=(x>=1); System.out.println("x="+x+"y="+y); System.out.println("x="+x+"y="+y);		

Q3: Find and correct errors in the following code segments (1 error each): (Total 4)

Line	a)	Line	b)
1	public class <u>short</u> {	1	public class one {
2	public static void main(String args[]) {	2	public static void main(String args[]) {
3	double y=10;	3	String s1="ABC" ,s2="Abc";
4	System.out.println(y);	4	boolean test= equals(s1,s2);
5	}}	5	if(test)
Error	<u>line 1</u> short is a Key word and we can't use it as name of class	Error	<u>line 3</u> boolean test= equals(s1,s2); method string.method (s1,s2);
Correction or reason	any word short or Public class short Short Captial	Correction or reason	s1.equals(s2);
Line	c)	Line	d)
1	public class myClass {	1	public class prog {
2	public static void main(String args[]) {	2	public static void main(String args[]) {
3	int num;	3	if(10>5) && if(5>2)
4	Scanner read = new Scanner (System.in);	4	System.out.println("in range");
5	num=read.nextInt();	5	else
6	}	6	System.out.println("not in range"); }
Error	<u>line 4</u> Scanner doesn't import Scanner should import Scanner before start class	Error	<u>line 3</u> if (10>5) && (5>2)
Correction or reason	import java.util.*; Public class myClass	Correction or reason	if (10>5 && 5>2)

Q4: Write one or more Java statements: (Total 4)

a- Write a statement to assign a double variable **d** to a float variable **x**.

~~float x = (float) d;~~ **float x = df**
(float) d; - 0.25

b- Convert the following switch-case code to an if-else code

```
switch (i)
{
case 0: case 1:
    n = 10;
    break;
case 2:
    n = 500;
    break;
default:
    n = 0;
    break;
}
```

```
if (i == 0 || i == 1)
    n = 10;
else if
    if (i == 2)
        n = 500;
else
    n = 0;
```

c- Given a String **s**, write java statements to print the location of the second occurrence of the string "is".

System.out.println(s.indexOf(s.indexOf("is")+1));

Q5: Write program: (Total 5)

Write a complete program that reads two strings S1 and S2 from the user and print a new string made of the first two characters of S1 and the last two characters of S2. If either string has only one character, use '#' for its missing char.

For example:

S1="day", S2="night" → "daht"

S1="a", S2="be" → "a#be"

~~import java.util.*;~~

~~public class~~

import java.util.*;

public class mid1 {

public static void main(String args[]) {

Scanner in = new Scanner(System.in);

String S1, S2;

System.out.println("enter two word with space between them");

S1 = in.next();

S2 = in.next();

if (S1.length < 2) {

S1 = S1.concat("#");

S2 = S2.substring(0, 2);

}

if (S2.length < 2) {

S2 = S2.concat("#");

S1 = S1.substring(0, 2);

}

if (S1.length >= 2 & S2.length >= 2) {

S1 = S1.substring(0, 2);

S2 = S2.substring(0, 2);

}

System.out.println(S1+S2);

Quiz 2

Q1: Multiple choice (3pt, each 0.75)

Serial Number:
Section Number:

8.75

```
for (int i = 0; i <= 4; i++)  
    for (int n = 0; n < 2; n++)  
    {  
        System.out.println("Quiz");  
        n--;  
    }
```

How many times the statement
System.out.println("Quiz") is executed?

- A. 10 times.
- B. 8 times.
- C. 2 times.
- D. Infinite loop.

Which of the following is a valid array
declaration?

- A. int[] Arr = new int(4);
- B. int[] Arr = new int[4];
- C. int[] Arr = new Arr(4);
- D. int[] Arr = new Arr[4];

```
int x = 10;  
String str = "Done";  
while (x > 0)  
{  
    x /= 2;  $x = \frac{10}{2} = 5$   $x = \frac{5}{2} = 2.1$   
    if (x == 5)  
        continue;  
    System.out.print(str);  
}
```

How many times the statement
System.out.print(str) is executed?

- A. 0 times.
- B. 3 times.
- C. 4 times
- D. Infinite loop.

What will be the output of the following code

```
Char [] Arr = { 'a', 'b', 'c' };  
System.out.println(Arr[Arr.length]);
```

- A. compiler error
- B. run time error
- C. c
- D. 3

KING SAUD UNIVERSITY
COLLEGE OF COMPUTER AND INFORMATION SCIENCES
COMPUTER SCIENCE DEPARTMENT

CSC 111: Introduction to Programming
with Java

Quiz 2

1st Semester 1439-1440

Q2: What is the output for the following code (Please use ~ to represent space, extra output -0.25)? (3.5 pt)

code	Output
<pre>int [] array = {12, 15, 17, 19}; int [] index = {2, 3, 0, 1}; for(int i = 0; i <= 3; i++) array[index[i]] = array[i]; for(int i = 0; i < 4; i++) System.out.println(array[i]);</pre>	<p>17 19 12 15</p>
<pre>int num = 20, sum = 0; while (num > 15) { sum += num; for (int k = 1; k < 3; ++k) { sum += k; num -= k; } } System.out.println("num=" + num + " sum=" + sum);</pre>	<p>num = 14 ~ sum = 43</p>

Q3: write java statements that continue to read integer numbers until the average value of these numbers becomes greater than 50. (3.5 pt)

~~boolean x = false;~~
~~while (!x) {~~
~~System.out.println("Enter number");~~
~~int num = input.nextInt();~~
~~int counter = 0;~~
~~while (!x) {~~
~~num = num + num;~~
~~counter++;~~
~~double average = (num / (double) counter);~~
~~if (average >= 50) {~~
~~x = true;~~
~~break;~~
~~}~~

boolean x = false;
 int counter = 0;
 int num = 0;
 while (!x) {
 System.out.println("Enter number");
 num = input.nextInt();
 sum = num + num;
 counter++;
 double average = (num / (double) counter);
 if (average > 50) {
 x = true;
 }
 else
 continue;
 } //end while

-0.25

Mid 2

1: multiple choice / State if the following statements are True or False: [3 pts. =0.75
h]

Statement	True/False
Two arrays are considered <u>equal</u> if all corresponding elements in both arrays are <u>equal</u> <u>no matter</u> if they have the same size or not.	False
The continue statement <u>skips</u> the remaining statements inside the loop; and <u>proceeds</u> with the next iteration, if any.	True
A return statement in a value-returning method can return <u>many</u> values. <u>one</u>	False
This loop executes <u>infinite</u> times <pre>int a=8; do { a = a*2; 8*2 16 system.out.println(a); } while(a>=8);</pre> <u>a <=</u>	True

: What is the output for the following code segments: [3 pts.] (1.5+1.5)

Notes:

- Please use ~ to represent space.
- Any extra output is -0.25

<p>a-</p> <pre> int digit = 100; while (digit > 30) { if (digit == 60) { digit = digit - 30; system.out.println(digit); continue; } if (digit < 40) break; digit = digit - 20; system.out.println(digit); } </pre> <p>Handwritten notes for (a):</p> <ul style="list-style-type: none"> $100 > 30$ $100 - 20 = 80$ $80 > 30$ $80 \neq 60$ $80 < 40$ (False) $80 - 20 = 60$ $60 > 30$ $60 == 60$ (True) $60 - 30 = 30$ $30 > 30$ (False) 	<p><u>Output</u></p> <p>80 60 30</p>						
<p>b-</p> <pre> public static void main(String[] args) { double x = read.nextDouble(); system.out.println(method1(x)); } public static double method1(double x) { double result; if (Math.abs(x) < 100) result = Math.round(x); else result = Math.floor(x); return result; } </pre> <p>Handwritten notes for (b):</p> <ul style="list-style-type: none"> For $x = 90.1$: $90.1 < 100$ (True), $\text{round}(90.1) = 90$. For $x = -110.7$: $-110.7 > 100$ (True), $\text{floor}(-110.7) = -111$. 	<table border="1"> <thead> <tr> <th><u>Input</u></th><th><u>Output</u></th></tr> </thead> <tbody> <tr> <td>90.1</td><td>90.0</td></tr> <tr> <td>-110.7</td><td>-111.0</td></tr> </tbody> </table>	<u>Input</u>	<u>Output</u>	90.1	90.0	-110.7	-111.0
<u>Input</u>	<u>Output</u>						
90.1	90.0						
-110.7	-111.0						

Find and correct errors in the following code (there are 4 errors): [4 pts.] (0.5 find 0.5 correct the error)

Do not remove any line.

```

import java.util.Scanner;
public class errors {
    public static void main(String[] args) {
        Scanner read = new Scanner (system.in);
        int a=2, b=3, total;
        int[] list=new int[30];
        char ch1='A';
        boolean result;
        for (int i=0; i<list.length; i++)
            list[i*2]= read.nextInt();
        result= isLetter(ch1);
        system.out.println(ch1 + " is letter?" + result);
        sum(a,list);
    }
    public static void sum(int x, int y){
        return x+y;
    }
}
    
```

Error	Correction
النوع الذي اريد ان يكون في المتغير the type in caller is different	sum(a,b);
Type of the method النوع هو void وهو يرجع قيمة	Public static int sum (int x , int y) {
Syntax of the method character class لا	The type of result is boolean so should the value that return result = Character.isLetter(ch1);
Don't use the return value in variable or print it لا تستخدم القيمة في المتغير أو في طباعة	total = sum(a,b); System.out.print(total);
(وهو في الأساس هو total	System.out.print(sum(a,b));

Write one or more Java statements: [5 pts.] (1 + 2.5 + 1.5)

- a- Assume that you have two integer numbers x and y that already declared and initialized. Write a one statement to compare x and y and assign the larger number in variable **maximum**. (1 pt)

`maximum = Math.max(x, y);`

- b- Complete the below code by writing the required statements using the following methods: (2.5 pt)

Method Name	Description
fillarray	fill out the values of every element from the user
middle_element	Returns the middle element of array. The returned value will be printed in the main method.
main	use the two defined methods to: <ul style="list-style-type: none"> fill the array print the middle element of the array

```
static Scanner read = new Scanner (System.in);
```

```
public static void main(String[] args)
```

```
{
    int[] list = new int[5];
```

```
    fillarray(list);
```

```
    System.out.print(middle_element(list));
```

```
}
```

```
//method fillarray
public static void fillarray(int[] list1)
```

```
{
    int n=list1.length;
    for (int j=0; j<n; j++)
        list1[j]=read.nextInt();
}
```

```
//method middle_element
```

```
public static int middle_element(int[] list2)
```

```
{
    return list2[indexOf(charAt(list2.length/2+1))];
}
```

- c- Write java statements that read 3 passwords of type string, and print the password as stars. (1.5 pt)

```
for (int i = 0; i < 3; i++) {
    System.out.println("Enter the password");
    String password = read.next();
```

```
    for (int i = 0; i < password.length(); i++) {
        System.out.print("*");
    }
```

```
    System.out.println();
}
```

```
}
```

Sample Run:
Enter the password :
Sara

Enter the password :
Mid1432

Enter the password :
12345678

Write a complete program: [5 pts.]

Write a program that prompts the user to enter a number of patients and then for every patient entered determines what patient has high/low/average blood pressure. The program should work as follows:

- Read the number of patients in the main method.
- For each patient, read name and blood pressure.
- Call and print a user-defined method named checkPressure that returns 3 possible values: low / high / average.

Blood pressure	Low	Average	High
	Less than or equal 121	Between 122 and 146	Greater than or equal 147

```

import java.util.Scanner;

public class Patients {
    static Scanner input = new Scanner(System.in);

    public static void main(String[] args) {
        System.out.print("Enter number of patients");
        int numberOfPatients = input.nextInt();
        String name = "";
        int pressure = 1;
        for (int i = 1; i <= numberOfPatients; i++) {
            System.out.println("Enter your name:");
            name = input.next();
            System.out.println("Enter your blood pressure:");
            pressure = input.nextInt();
            System.out.print("Your blood pressure is " + checkPressure(pressure));
        }
    }

    static String checkPressure(int bloodPressure) {
        String ave1 = "low", ave2 = "Average", ave3 = "High";
        if (bloodPressure <= 121)
            return ave1;
        else if (bloodPressure >= 122 && bloodPressure <= 146)
            return ave2;
        else if (bloodPressure >= 147)
            return ave3;
    }
}

```

Sample Run:

```

Enter number of patients>> 2
Patient#1
Enter your name:
Amal
Enter your blood pressure:
120
Your blood pressure is low
Patient#2
Enter your name:
Norah
Enter your blood pressure:
125
Your blood pressure is average

```