

**Ministry of Higher Education
Colleges of Applied Sciences
Final Exam Academic year 2008/2009**

Course name: Programming1 (SFDV2003)

Date:

Time: 2 Hour ()

College: Ibri [] Nizwa[] Salalah[] Sohar[] Sur[]

Student's Name _____ Group No. _____ Student ID: _____
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Instructions for students
This exam lasts 2 hours and is worth 40% to your final mark for SFDV2003
Please, place all bags/folders ...etc at the front or back of the room.
TURN OFF all mobile phones
DO NOT TALK during the exam without permission from the invigilator
Hand the exam paper back to your invigilator at the end of the exam

For Lecturer's use only

Question	Mark allotted	Mark scored							
Multiple choice (30 x 2)	60								
Short Answer (7 x 4)	28	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 12.5%; height: 20px;"></td> <td style="width: 12.5%;"></td> <td style="width: 12.5%;"></td> <td style="width: 12.5%;"></td> <td style="width: 12.5%;"></td> <td style="width: 12.5%;"></td> <td style="width: 12.5%;"></td> </tr> </table>							
Long Answer (2x6)	12	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; height: 20px;"></td> <td style="width: 25%;"></td> <td style="width: 50%;"></td> </tr> </table>							
Total	100	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 100%; height: 20px;"></td> </tr> </table>							

Examiner:

Signature

Checked by:

Signature

Answer sheet for multiple choice Section:

Please move the answers of multiple choices Section to the matrix below.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

MULTIPLE CHOICE Section:

(2 Marks each, Total 60 Marks)

1. Java is a _____ generation language.
A. First
B. Second
C. Third
D. Fourth
2. Which of the following is an **incorrect** comment in Java language?
A. // comment
B. // comment //
C. /* comment */
D. / * comment * /
3. Which of the following is an **incorrect** identifier in Java language?
A. main
B. void
C. variable_
D. \$variable
4. **double d = 10 / 0 ;** is _____ error.
A. a compile-time
B. a run-time
C. a logical
D. Not
5. **Data fields** are a part of a-----
A. class so they can be accessed by every method in the class
B. method and can only be accessed within the method
C. Both A and B
D. Non of the above

6. Given :

int x = 3 , y = 2 , z = 2 ;

regarding to short- circuit evaluation the following Boolean expression:

y == z || (y + z) >= (x - z) Is equal to

- A. **y == z**
- B. **(y - z) >= (x + z)**
- C. **y == z && (y - z) >= (x + z)**
- D. Non of the above

7. Assume that the following code is correctly inserted into a program. What will be printed out to the screen?

```
int x = 2 , y = 1 ;  
System.out.println( ( x = y ) == y );
```

- A. 1
 - B. 2
 - C. True
 - D. False
8. What is the type of the literal `77e-7` in Java?
- A. char
 - B. int
 - C. String
 - D. Double
9. What is size of a short data type in Java?
- A. 8 bits
 - B. 16 bits
 - C. 32 bits
 - D. 64 bits
10. The best way to define `PI = 3.14` constant value in Java is using
- A. `const double PI = 3.14`
 - B. `private double PI = 3.14`
 - C. `final double PI = 3.14`
 - D. `double PI = 3.14`
11. In a java arithmetic operation, how does the compiler act when an operand is a character?
- A. The character's Unicode value is used in the operation.
 - B. A runtime error is encountered.
 - C. The compiler produces a syntax error.
 - D. The other operands are converted into characters.
12. What is the result of evaluating the following expression?

$(1/2 + 3.5) * 2.0$

- A. 8.0
- B. 8
- C. 7.0
- D. 0

13. What happens if expression below executed?

```
int i = (int) 2.988;
```

- A. Explicit narrowing cast double to int.
- B. Implicit narrowing cast double to int.
- C. Illegal narrowing.
- D. Promotion of double to int.

14. What does the following method call return?

```
Math.pow(3,2)
```

- A. 5
- B. 6
- C. 9.0
- D. 9

15. Assume that the following code is correctly inserted into a program. What does the code segment prints out to the screen?

```
char c = 'a';  
System.out.println(c++);
```

- A. a
- B. b
- C. 98
- D. Null

16. Assume that the following code is correctly inserted into a program. What the code segment will print to the screen?

```
int x=6;  
if (x<=6)  
    System.out.println( x-9*2/x);
```

- A. -1
- B. 3
- C. 3.0
- D. Non of the above

17. Assume that the following code is correctly inserted into a program. What does the code fragment print to the screen?

```
int depth = 8 ;
if ( depth >= 8 )
{
    System.out.print("Danger: ");
    System.out.print("deep water. ");
}
System.out.println("No swimming allowed.");
```

- A. Danger
 - B. Danger: deep water
 - C. deep water. No swimming allowed.
 - D. Danger: deep water. No swimming allowed.
18. The execution of switch will ----- if a case is missing the break.
- A. Carry on into the next case.
 - B. be terminated.
 - C. be transfer to the statement after switch statements.
 - D. Non of the above
19. In switch, the value of a selector variable must be-----
- A. int or char.
 - B. int or double.
 - C. double or char.
 - D. boolean or char.
20. Loops are useful for things like:
- A. repeated calculations
 - B. reading an unknown amount of input
 - C. repeating operations to make sure that certain conditions are true or false
 - D. all above .
21. The for(...) loop header usually contains:
- A. initialization; update; condition
 - B. condition; initialization; update
 - C. update; condition; initialization
 - D. initialization; condition; update

22. Assume that the following code is correctly inserted into a program. What is content of variable z after execution?

```
int z = 1;
do {
    --z;
} while (z == 0);
System.out.println(z);
```

- A. null
- B. 1
- C. 0
- D. -1

23. Assume that the following code is correctly inserted into a program

```
int s=0;
for (int i=0; i<5; i++) {
    s= 2*s+i;
    System.out.print(s + " ");
}
System.out.println();
```

What is the final value of s?

- A. 11
- B. 4
- C. 26
- D. Non of these

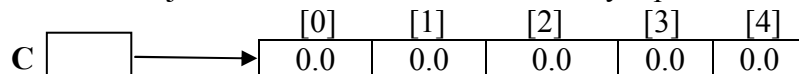
24. The process to setting up an array is

- A. Declare the array.
- B. Initialise the array.
- C. Initialise the element.
- D. All above.

25. In array if you try to use an index that is out of array range the interpreter will -----

- A. Generate an error.
- B. Resize the length of array.
- C. Create new array that hold the new range.
- D. Non of the above

26. Select the correct java statement that declare an array represented by the data structure below.



- A. `int[] C = new int[];`
- B. `int[] C = new int[5];`
- C. `double [] C = new double[5];`
- D. `double [] C= new double [];`

27. Assume that the following code is correctly inserted into a program. What does this code segment print to the screen:

```
int[ ][ ] arr = new int[4][3];  
System.out.println(" The length is: " + arr[0].length);
```

- A. The length is : 3
- B. The length is : 4
- C. The length is : 12
- D. None of the above.

28. The correct order of method header components is :

- A. modifiers, return value type, method name, parameters
- B. return value type, modifiers, method name, parameters
- C. parameters, method name, return value type, modifiers
- D. modifiers, method name, return value type, parameters

29. If the method does not return a value, its return value type would be:

- A. boolean
- B. null
- C. void
- D. blank

30. Two methods have different signatures if they have -----

- A. Different names
- B. Different parameter list
- C. Different names and different parameter list.
- D. Different name or different parameter list

Short answers section.

(4 Marks for each)

1. **A)** Complete the statement which will assign the whole number value of variable p to variable q .

```
double p = 3.0;
```

```
int q =
```

(2 Marks)

- B)** Suppose a,b, and c are int variable and a=5 and b=6. What value is assigned to int variable c after statement execution?

```
c= 2 * a + (++b)
```

(2 Marks)

2. Write a boolean expression to :

- A.** assign a value of true to boolean variable pass if score is in the range 50 to 100, inclusive; otherwise assign a value of false.

(2 Marks)

- B.** assign a value of true to boolean variable result if i is less than j and limit is true

(2 Marks)

3. **A)** Suppose the input is 6. What is the value of (a) after the following Java code executes?
(Assume that all variables are declared properly).

```
a= scan.nextInt( );  
if (a>0)  
    switch ( a )  
    {  
        case 1:  
            a=a+3;  
        case 3:  
            a++;  
            break;  
        case 6:  
            a=a+6;  
        case 8:  
            a=a*8;  
            break;  
        default:  
            a -- ;  
    }  
else  
    a=a+2;
```

(2 Marks)

- B) Transform the following `while` loop into an equivalent `do` loop (make sure it produces the same output).

```
int num = 1;
while (num < 20){
    num++;
    System.out.println(num);
}
```

(2 Marks)

4. Determine the exact output of the following program segments

```
for (int i=1; i<=5; i++)
{
    for (int j=(i+1); j<=5; j++)
        System.out.println(" " + j);
    System.out.println();
}
```

(4 Marks)

5. Suppose *Data* is an array of five elements of type *int*.

What is stored in *Data* after the following java code executes?

```
for ( i= 0 ; i < 5 ; i++ )
{
    Data[i]= 2* i+5;
    if ( i% 2 == 0)
        Data[i] = Data [i] -3 ;
}
```

(4 Marks)

6. Write a method called `adder` which takes an `int` and a `double` as parameters, and returns their sum.

(4 Marks)

7. What are errors with following program? Specify the errors and specify the type of each

```
1    public class ShowErrors {
2        public static void man(String args){
3            int i
4            int j = 5;
5
6            if (j = 5 )
7                System.out.println(i+ j/0);
8            else
9                System.out.println( "There is no result");
10
11        }
12    }
```

(4 Marks, 1 mark for each)

Long answer section (6 Marks for each)

8. Write java statements that accomplish the following : **(1 Mark for each)**

A. Initialize an int variable x to 10 and a char variable ch to 'B'.

(1 Mark)

B. Update the value of an int variable x by adding 5 to it **(1 Mark)**

C. Swap the contents of the int variable x and y. (declare additional variables, if necessary.)

(1 Mark)

D. Declare an array alpha of 15 elements of type int.
(1 Mark)

E. Set the value of the fourth element of the array alpha to three times the value of the eighth element, minus 57
(1 Mark)

F. Output alpha elements.
(1 Mark)

9. Write an application program to count the occurrence of zeros and determine its position in two dimension array of integer.
Suppose the array name is zeros and the dimension is 3x4 (3 rows and 4 columns)