OL Academy

ITCS106,113
Midterm Exam Revision
Second Semester 2025/2026

Chapter 2 - Basic Computation

(1) After executing the code, what will be the values of x, y and z?

(a) x = 2, y = 6, z = -7
(b) x = 2, y = 5, z = -7
(c) x = 2, y = 6, z = 3
(d) x = 2, y = 5, z = 3

```
int x, y, z;
x = 1;
y = 5;
z = 0 - (++x) + y++;
```

(2) Suppose you have the string s="SELECT". What is the return value of s.substring(0, 5)?

(a) "SELE"
(b) "ELECT"
(c) "SELECT"
(d) "SELEC"

(3) Which of the following is not a method of Scanner class?

(a) nextByte()
(b) next()
(c) nextChar()
(d) none of the above

(4) Which of the following statements correctly creates a Scanner object for keyboard input?

(a) Scanner kbd = new Scanner(System.keyboard);
(b) Scanner keyboard = new Scanner(System.in);
(c) Scanner keyboard(System.in);
(d) Keyboard scanner = new Keyboard(System.in);

(5) What is the Java expression for $4a^2 + 2b \times c$?

(a) (4 * a) + (2 * b) * c
(b) (4 * a * a) + ((2 * b) * c)
(c) ((4 * a * a) + (2 * b)) * c
(d) (4 + a * a) + ((2 + b) * c)

(6) After executing the code, what will be the output?

(a) x = 9, y = 8, z = 17
(b) x = 9, y = 8, z = 16
(c) x = 10, y = 7, z = 17
(d) x = 9, y = 7, z = 16

```
int x, y, z;
x = 10;
y = 7;
z = (--x) + y++;
System.out.println("x = " + x +
                   ", y = " + y +
                   ", z = " + z);
```

(7) After executing the code, what will be the output?

(a) x = 27, y = 3.333, z = 18
(b) x = 27, y = 2, z = 18
(c) x = 37, y = -14, z = 4
(d) x = 27, y = 3, z = 18

```
int x = 15, y = 20, z = 32;
x += 12;
y /= 6;
z -= 14;
System.out.println("x = " + x +
", y = " + y +
", z = " + z);
```

(8) After executing the code, what will be the output?

(a) one
(b) two
(c) onetwo
(d) twoone

```
String s1 = "one";
String s2 = s1.concat("two");
```

(9) After executing the code, what will be the output?

(a) JAVA a ++Java
(b) JAVA a JAVA++
(c) JAVA v Java++
(d) JAVA v ++JAVA

```
String str = "Java";
System.out.print(str.toUpperCase() +
" ");
System.out.print(str.charAt(2) + "
");
System.out.print(str.concat("++"));
```

(10) Which of the following statement prints `smith\exam1\test.txt` ?

```
(a) System.out.println("smith\exam1\test.txt");
(b) System.out.println("smith\\exam1\\test.txt");
(c) System.out.println("smith\"exam1\"test.txt");
(d) System.out.println("smith"\exam1"\test.txt");
```

(11) The expression (int)(76.0252175 * 100) / 100 evaluates to

(a) 76.02
(b) 76
(c) 76.025215
(d) 76.03

(12) Which of the following statements are the same?

(1) x -= (x + 4)
(2) x = x + 4 - x
(3) x = x - (x + 4)

(a) (1) and (2) are the same
(b) (1) and (3) are the same
(c) (2) and (3) are the same
(d) (1), (2), and (3) are the same

(13) What is the output of the following codes?

```
int a = 7, b = 5;
double c = 5.3, d;
d = c - a / 4 * 2;
System.out.println("d = "+d);
b *= a + 32;
c = ++a * 3;
System.out.println("a="+a+"\tb="+b+ "\tc="+c);
System.out.println(b%4 +"\t" + b%10);
```

(14) What is the output of the following codes?

```
String line = " You have 75 minutes.";
System.out.println(line.length());
int n = line.indexOf("7");
System.out.println("n = " + n);
String msg = line.substring(4,n);
System.out.println(msg.toUpperCase());
msg = msg.concat("fun.");
System.out.println(msg);
```

(15) The Bahraini Charity Club is conducting a fundraiser by selling chilli dinners to go. The price is BD2.1 for an adult meal and BD1.2 for a child's meal.

Write a Java program that accepts the number of each type of meal ordered and display the total money collected for adult meals, children's meals and all meals.

SAMPLE INPUT/OUTPUT
Enter number of adult and child meals **135 287** Adults Collected Money: BD 283.5 Children Collected Money: BD 344.4 Total Collected Money: BD 627.9

Chapter 3 - Flow of control - Branching

(1) Consider the code on the right
Which data types are acceptable types for **x**?

(a) **int** and **float**
(b) **char** and **double**
(c) **int, short,** and **String**
(d) **long, float** and **double**

```
switch(x) {
    default:
System.out.println("Hello");
}
```

(2) Consider the code on the right Which of the following is true?

(a) If **a** is true and **b** is true then the output is "A && B"
(b) If **a** is true and **b** is false then the output is "notB"
(c) If **a** is false and **b** is true then the output is "ELSE"
(d) If **a** is false and **b** is false then the output is "ELSE"

```
// a and b are Boolean variables
if( a )
    System.out.println("A");
else if(a && b)
    System.out.println( "A && B");
else {
   if ( !b )
      System.out.println( "notB") ;
   else
      System.out.println( "ELSE" ) ;
 }
```

(3) After executing the code on the right what is the output?

(a) Boy
(b) Man
(c) Girls
(d) Woman

```
boolean male = false;

int age = 30;

if( age <= 30 && male)

  if( age < 20 )

    System.out.println("Boy");

  else

    System.out.println("Man");

else

  if( age< 20 )

    System.out.println("Girl");

  else

    System.out.println("Woman");
```

(4) After executing the code on the right what will be the values of a and c?

(a) a = 10, c = 10

(b) a = 11, c = 10

(c) a = 10, c = 11

(d) a = 11, c = 11

```
int a=10, b=5, c=10;
if (a>b && a<=c)
   a = a + 1;
else
   c = c + 1;
```

(5) After executing the code on the right what will be the values of a and c?

(a) x

(b) y

(c) 10

(d) 20

```
int x=10;
int y=20;
System.out.println(x>y?x:y);
```

(6) What is the output of the following codes?

```
int a=1, b=2;
a++;
b += a;
if (b % 2 == 0) {
a++;
System.out.println("a+b");
} else {
a--;
System.out.println("a*b");
}
System.out.println (a + "\t" + b);
```

(7) Write a Java program that asks the user to input the weight of a canary bird in grams. The program should determine and display a message the category of the bird's weight according to the following table:

Weight	Category
Between 50 Grams and 100 Grams (inclusive)	Healthy
Under 50 but above 20 OR above 100 but under 130	Critical
All other ranges	Endangered

SAMPLE INPUT/OUTPUT

```
Enter the weight: 100
Healthy
```

Chapter 4 - Flow of control - Loops

(1) After executing the code on the right what is the output?

(a) 6 3 0
(b) 6 3
(c) 3 0
(d) 3 0 -3

```
int number = 6;
while (number > 0) {
  number -= 3;
  System.out.print(number + " ");
}
```

(2) After executing the code on the right what is the output?

(a) y=1
(b) y=3
(c) y=4
(d) y=5

```
int y=0;
for (int x=1; x <= 4 ; x++)
   y=x;
System.out.println("y=" + y);
```

(3) What is the output of the following program segment

(a) 2*2=4

(b) 3*3=9
2*2=4

(c) 3*3=9
1*1=1

(d) 3*3=9
2*2=4

```
for (int i=3; i>=1; --i)
    if(i==2)
        continue;
    else

System.out.println(i+"*"+i +"="+
i*i);
```

(4) What is the output of the following program segment

(a) LLLHHH
(b) HHHLL
(c) LLHHH
(d) HHLLL

```
for (int i=1; i<6; i++)
{
    if (i > 3)
       System.out.print("L");
    else
       System.out.print("H");
}
```

(5) How many times will the following `do-while` loop be executed?

```
int x = 11;
do
{
    x += 20;
} while (x > 100);
```

a) 0
b) 1
c) 4
d) 5

(6) After executing the code on the right what is the output?

(a) ADC
(b) ADCD
(c) AD
(d) A

```
char x = 'A';
while(x != 'D') {
  switch(x) {
    case 'A': System.out.print(x);
              x = 'D';
    case 'B': System.out.print(x);
              x = 'C';
              break;
    case 'C': System.out.print(x);
              x = 'D';
    default: continue;
  }
}
```

(7) What is the output of the following codes?

```
String word = "10011";
boolean enough = false;
int i = word.length(), prod = 1;
while ( !enough )
{
  i--;
  prod *= 2;
  if (word.charAt(i)=='1')
     prod++;
  if (prod > 10)
     enough = true;
  System.out.println(prod);
}
```

(8) What is the output of the following codes?

```
int x = 0, y = 0;
for(int i=1; i<=6; i++)
{
  if (x > y)
    System.out.println("i = " + i);
  if (i % 2 == 0)
    x += i;
  else
    y += i;
}
System.out.println("x = " + x + ", y = " + y);
```

(9) Write a Java program using a **LOOP** to print the date of all Sundays in a month, if the date of the first Sunday is given. First prompt the user to input the number of days in the month, then prompt the user to input the date of the first Sunday in that month. After that find all Sundays in the given month and output. Assume all inputs are valid. Your program must follow the given Sample Input/Output.

SAMPLE INPUT/OUTPUT
Enter number of days in the month:30 Enter the date of first sunday:7 All sundays in the month will be: 7 14 21 28

(10) Write a Java program to sell a limited number of cinema tickets. Each person can buy up to 4 tickets, where the number of available tickets is 100. Your program should do the following:

1. Prompt the user for the number of tickets to buy.
2. Display the number of remaining tickets.
3. Repeat the above steps until all tickets have been sold.
4. Display the total number of buyers.

Invalid testing: (1) If the number of tickets to buy is negative or zero, then print an invalid message. (2) If the number of tickets to buy is more than 4, then print a message that the maximum tickets to buy is 4. (3) If the number of tickets to buy is more than the available tickets, then print a message that there are no enough tickets available

SAMPLE INPUT/OUTPUT
How many tickets do you want to buy? **3** Available tickets = 97 How many tickets do you want to buy? **6** Sorry. Maximum tickets to buy is 4. ….. How many tickets do you want to buy? **4** Available tickets = 2 How many tickets do you want to buy? **3** Sorry. Only 2 tickets are left. How many tickets do you want to buy? **2** Total number of buyers is 32