Java Exercise 1:
Introduction to Java Application

Duration: 120 minutes
Instructions: Thoroughly read what is asked on items *1 to 5*. Answer in a separate sheet.

1. **Application**. Write declarations, statements or comments that accomplish each of the following tasks:
    a. State that a program will calculate the product of three integers.
    b. Create a Scanner called input that reads values from the standard input.
    c. Declare the variables x, y, z and result to be of type int.
    d. Prompt the user to enter the first integer.
    e. Read the first integer from the user and store it in the variable x.
    f. Prompt the user to enter the second integer.
    g. Read the second integer from the user and store it in the variable y.
    h. Prompt the user to enter the third integer.
    i. Read the third integer from the user and store it in the variable z.
    j. Compute the product of the three integers contained in variables x, y and z, and assign the result to the variable result.
    k. Display the message "Product is" followed by the value of the variable result

2. **Evaluation**. Assuming that x=2 and y=3, what does each of the following statements display?
    a. System.out.printf("x = %d\n", x);
    x = 2
    b. System.out.printf("Value of %d + %d is %d\n", x, x, (x + x));
    Value of 2 + 2 is 4
    c. System.out.printf("x =");
    x =
    d. System.out.printf("%d = %d\n", (x + y), (y + x));
    = 5, 5

3. **Multiple Choice**. Which of the following Java statements contain variables whose values are modified?
    (a.) p=i+j+k+ 7;
    b. System.out.println("variables whose values are modified");
    c. System.out.println("a = 5");
    (d.) value = input.nextInt();

4. **Multiple Choice**. Given that y = ax3 + 7, which of the following are correct Java statements for this equation?
   a. y=a*x*x*x+ 7;
   b. y=a*x*x*(x+ 7);
   c. y=(a*x)*x*(x+ 7);
   d. y=(a*x)*x*x+ 7;
   e. y=a*(x*x*x)+ 7;
   f. y=a*x*(x*x+ 7);

5. **Application**. State the order of evaluation of the operators in each of the following Java statements, and show the value of x after each statement is performed:
   a. x = 7 + 3 * 6 / 2 - 1;
      x = 7 + 18 / 2 – 1;
      x = 7 + 9 – 1;
      x = 16 – 1;
      x = 15
   b. x = 2 % 2 + 2 * 2 - 2 / 2;
      x = 2 % 2 + 4 – 2 / 2;
      x = 4 – 2 / 2;
      x = 4 – 1;
      x = 3;
   c. x = (3 * 9 * (3 + (9 * 3 / (3))));
      x = (3 * 9 * (3 + (27 / (3)))))
      x = (3 * 9 * (3 + (9)))
      x = (3 * 9 * (12))
      x = (27 * (12))
      x = 324