Note: Questions below are samples from some previous midterms, by other instructors.

**Question #1:**

A-describe the hardware components of your personal computer or of a computer in a lab to which you have access. Include the processor type and speed, storage capacities of main and secondary memory, and types of I/O devices. Explain briefly how you determined your answers.

B-How many unique items can be represented with each of the following?
1 bit, 3 bits, 6 bits

C- Explain the difference between random-access memory (RAM) and read-only memory (ROM).

D- Categorize each of the following errors according to the described situations.
   a. multiplying two numbers when you meant to add them
   b. dividing by zero
   c. forgetting a semicolon at the end of a programming statement

E-What is wrong with the following program statement? How can it be fixed?

```java
System.out.println ("To be or not to be, that is the question.");
```

**Question #2:**

Write Java applet that can print information about the programmer.

**Question #3: 5 Marks**

Write Java program that can compute the number of hours, minutes, and seconds that are equivalent to the number of seconds entered by the user.

**Question #4:**

Write a Java program that can converts miles into kilometers. The value for miles is read from the user. Kilometers = 1.60935 Miles. Use the Named Constant in your program.

**Question #5:**

Write Java program that can produce a username based on the user's first and last names. Assumes the last name is at least five characters long. Hint (the user name would be first later from the first name and the first 5 letters from the last name).
**Question 6**

a. Give the binary representation of the decimal 49.

b. What are the different components of a computer?

c. What is a CPU? what does it do?

**Question 7**

Indicate if the following statements are True/False:

a. The Java compiler translates the Java source code into Java byte-code.
   *True [ ] False [ ]*

b. A Java program can involve only one class.
   *True [ ] False [ ]*

c. One byte has 16 bits.
   *True [ ] False [ ]*

d. The binary number 10101 represents the number 23 in decimal
   *True [ ] False [ ]*

e. A bit is a digit that assumes the two values 0 and 1.
   *True [ ] False [ ]*

**Question 8**

What are the values of x, y and z in each of the following code fragments:

```java
int x, y, z;
```

a. x = 2; y = 3; z = 5;
   x = ++y;
   z = z * 2;

b. x = 1; y = 2; z = 8;
   x = x + 3 * 2 * z;
   y = z % 3
   z = z + x;

c. x = 8; y = 3; z = 4;
   x = x / 3 - 7;
   y = x + y;
   z = y++;

d. x = 9; y = 3; z = 4;
   x = x & 4;
   y = x | z;
```
Question 9

a. What is the output of the following Java program:

```java
public class first {
    public static void main(String[] args) {
        int N, a, b, c;
        N = 3410;
        a = N % 100;
        System.out.println("a is: "+ a);
        N = N / 10;
        b = N % 100;
        System.out.println("b is: "+ b);
        c = N % 10;
    }
}
```

Question 10

Write a Java program that reads 5 integers from the user and prints out the average.

Question 11

A student taking a course has received the following marks:
M on the Midterm, F on the Final exam, A1, A2, A3 and A4 for the 4 assignments respectively.
All the marks are out of 100.
The marking scheme for the course is as follows: Midterm: 25%, Final Exam: 50% and Assignments: 25%

Write a Java method which calculates the final mark for the student.

Question 12

a) Given four integers A, B, C, D, write a Java class for testing if any two of them are same. The output is true if so, and false otherwise. Trace YOUR algorithm on the following two inputs:
b) 8, 12, 5, 17
d) 11, 8, 12, 8.