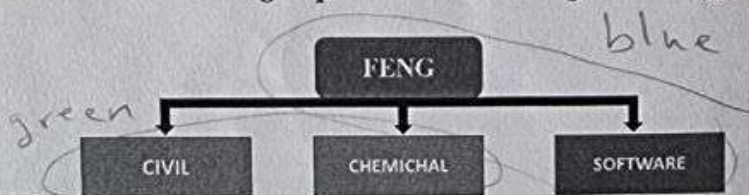


Answer All Questions

1. A. list 4 pros of Object-oriented programming over procedural programming (8 Marks)
B. what is an inheritance and which types are supported in java? Explain that with a source code example. (12 Marks)
2. Fill the following blanks. (20 Marks)
 1. The output of the Java compiler is known as Byte code program
 2. Main features of object-oriented programming in java are enca, polym, inheri, and abstra
 3. Marker is another concept of interface, it's called marker because of it does not contain any member
 4. Having limited options in generics parameter called bounding
 5. The main reason behind interface in java is Multiple inheritance
3. A. Mention the main differences between regular and anonymous class, give an example of anonymous class (10 Marks)
B. Write a program to do the following requirements (10 Marks)
 1. Create a generic method that has bounded type of Shape super class.
 2. Use anonymous class for circle subclass to print out the message "This is circle class"
4. Write a program to do the following requirements according to the diagram presented below. (20 Marks)



Note: Blue (Abstract Class); Green (Concrete Class)

1. Every student has to take drawing skill in the faculty of engineering.
2. Use constructor to initialize students following attributes (Name, ID, Age, and Gender)
3. Guess if we have another subclass under software and civil that inherit from both named "Test"
4. Use Software constructor to initialize FENG constructor using super keyword.

5. What is the output of the following Java programs?

(20 Marks)

1.

```
class Demo{
    public Demo(int i){
        System.out.println("int");
    }

    public void Demo(short s){
        System.out.println("short");
    }
}

public class Test{

    public static void main(String[] args){
        short s = 10;
        Demo demo = new Demo(s);
    }
}
```

2.

A) int

B) short

C) Compile-time error

D) Run-time error

```
class One{
    public static void print(){
        System.out.println("1");
    }
}

class Two extends One{
    public static void print(){
        System.out.println("2");
    }
}

public class Test{
    public static void main(String args[]){
        One one = new Two();
        one.print();
    }
}
```

A) 2

B) 1

C) Compile-time error

D) Run-time error

3.

```
class Math {
    public final double secret = 2;
}

class ComplexMath extends Math {
    public final double secret = 4;
}

public class InfiniteMath extends ComplexMath {
    public final double secret = 8;

    public static void main(String[] numbers) {
        Math math = new InfiniteMath();
        System.out.print(math.secret);
    }
}
```

4.

A. 2

B. 4

C. 8

D. The code does not compile.

```
// Shape.java
public class Shape {
    protected void display() {
        System.out.println("Display-base");
    }
}

// Circle.java
public class Circle extends Shape {
    < access - modifier > void display() {
        System.out.println("Display-derived");
    }
}
```

- A) Only the protected can be used.
B) public and protected both can be used.
C) public, protected, and private can be used.
D) Only the public can be used.

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