

Group - B

2. (a) What is association? With the help of a Java program briefly explain association.
- (b) Compare between the concepts aggregation and association with proper example.
- (c) What do you mean by meta class?

$$(2 + 2) + (3 + 3) + 2 = 12$$

- 3.(a) Explain with code example how Java implements the concepts of generalization, specialization and abstraction.
- (b) Why main method should be declared as public and static in Java? If we use default access specifier instead of public for main method, then what will happen? Support your answer with proper justification.

$$2 \times 3 + ((2 + 2) + 2) = 12$$

Group - C

4. (a) Is Java arrays are potentially advantageous over array concept of C? Justify your answer.
- (b) Predict the outputs of the following codes. Explain the reason(s) behind your answers: (report compilation time error and run time error before finding out outputs; if code seems error-free, then only discuss the output)

```
(i)
class TestApp {
    protected int x, y;
}
class Main {
    public static void
    main(String args[]) {
        TestApp app = new TestApp();
        System.out.println(app.x + " "
        + app.y);
    }
}
```

```
(ii)
class TestApp {
    int i[] = { 0 };
    public static void main(String
    args[]) {
        int i[] = { 1 };
        alter(i);
        System.out.println(i[0]); }
    public static void alter(int i[]) {
        int j[] = { 2 };
        i = j;
        System.out.print(i[0]+" ");
    }
}
```

```
(iii)
class TestApp {
    public static void
    main(String args[]) {
        int bits;
        bits = -3 >> 1;
        bits = bits >>> 2;
        bits = bits << 1;
        System.out.println(bits);
    }
}
```

$$3 + (3 \times 3) = 12$$

5. (a) Create an abstract class Accounts with the following details:

Data Members:

1. balance
2. accountNumber
3. accountHolderName
4. address

Methods:

1. withdrawl()-abstract
2. deposit()-abstract
3. display() to show the balance of the account number.

Create a subclass of this class SavingsAccount and add the following details:

Data Members:

- (a) rateOfInterest

Methods:

- (a) calculateAmount().

- (b) Define interface. Design an interface named Stack with the following methods:
1. Push and Pop elements from the stack.
 2. Check whether the stack is empty or not.
- Implement the stack with the help of arrays. Test this interface by inheriting it and its subclass.

$$5 + (3 + 4) = 12$$

Group - D

6. (a) Define throw, throws, finally in Java with example.
- (b) Write a Java program to merge the content of two files in a third file. Differentiate between checked and unchecked exception.

$$(2 + 2 + 2) + (4 + 2) = 12$$

7. (a) What will be the output of following program? Justify your answer.

```
class Demo
{
    void show(){}
}
class Demo2 extends Demo
{
    void show() throws IllegalAccessException,ArithmeticException
    {
        System.out.println("In Demo1 Show");
    }
    public static void main(String args[]){
        try{
            Demo2 d = new Demo2();
            d.show();
        }
        Catch(Exception e){}
    }
}
```

- (b) Create a user defined exception named Check Argument to check the number of arguments passed through command line. If the number of arguments is less than five, throw the CheckArgumentexception, else print the addition of all five numbers.

$$5 + 7 = 12$$

Group – E

8. (a) Explain the difference between sleeping, waiting and blocked states of Java thread.
- (b) Why thread sleep() and yield() methods are static?
- (c) Which is more preferred – synchronized method or synchronized block?
- (d) Write a program that takes a positive integer n from the command line and creates exactly n threads that print out their own name in format (for ith thread):
Hello, I am Thread #i

3 + 2 + 2 + 5 = 12

9. (a) Write a Java swing program which will accept two value in text boxes and display addition result in third text box.
- (b) Draw and explain thread life cycle model. What is the use of synchronized keyword-Explain?
- (c) With code example explain how to pass parameters from web documents to applet?

4 + (4 + 2) + 2 = 12