



HALDIA INSTITUTE OF TECHNOLOGY

(AN AUTONOMOUS INSTITUTION UNDER MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL)

Paper Code: PCC-CS 403

Paper Name: Object Oriented Programming

Time Allotted: 2 Hours

Full Marks: 70

The figures in the margin indicate full marks

Candidates are required to give their answers in their own words as far as practicable

Group – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives from the followings:

30 x 1 = 30

(i) Java is an object-oriented language which is [CO1]

- a) platform independent language b) a pure object-oriented language. c) free form language
d) all of the above

(ii) The Scanner class is defined in [CO1]

- a) java.util package b) java.applet package c) java.awt package d) none of the above

(iii) If the size of an array is less than the number of initializers [CO1]

- a) The extra values are neglected b) It is an error c) The size is automatically increased
d) The size is neglected

(iv) Java arrays are [CO1]

- a) simple variables b) objects c) class d) none of these

(v) In Java, arrays are allocated memory [CO1]

- a) statically b) dynamically using new c) by default allocation d) none of the above

(vi) Which of the statements is correct for method overloading? [CO2]

- a) return type does not serve any purpose b) type of argument should be equal for the method
c) number of argument should be the same d) none of the above

(vii) The class is an abstract data type (ADT) so creation of class simply creates a [CO1]

- a) function-like structure b) abstraction c) template d) none of the above

(viii) The lifetime of a static variable is the

- a) entire program b) only in main method c) only inside the class d) none of the above [CO2]

(ix) Find the correct statement. [CO2]

- a) We cannot pass argument in the constructor b) We can create only one constructor for a program
c) Constructor does not have any return type, not even void d) None of the above

(x) A copy constructor is a constructor in which _____ object is passed as argument. [CO2]

- a) Single b) three c) two d) none

(xi) 'this' reference is [CO2]

- a) implicit reference b) explicit reference c) both (a) and (b) d) none of the above

(xii) finalize method is used for [CO2]

- a) reclaiming the memory b) automatic memory management c) overriding for clean-up work d) none of the above

(xiii) For inheriting a class to another class Java uses the keyword [CO2]

- a) super b) final c) this d) extends

(xiv) The 'super' keyword always refer to the [CO2]

- a) derived class b) any base class c) immediate base class d) none of the above

(xv) Final class has the property that [CO3]

- a) can be inherited b) can be inherited publicly c) cannot be inherited d) none of the above

(xvi) An abstract class is declared using the keyword 'abstract' that [CO3]

- a) must contain abstract method b) cannot contain abstract method c) may or may not contain abstract method d) none of the above

(xvii) String 'toString()' method is used to [CO3]

- a) wait on another string of execution b) return a string that describes the object c) call before an unused object is recycled d) none of the above

(xviii) A heap memory area is used to store the [CO2]

- a) local variables declared in methods b) global variables c) memory for objects
- d) none of the above

(xix) The dynamically changing part of program memory can be divided into [CO2]

- a) stack memory area b) heap memory area c) both (a) and (b) d) none of the above

(xx) An interface is a collection of [CO3]

- a) constants b) variables c) classes d) constants and abstract methods

(xxi) A package is a collection of [CO4]

- a) related classes b) related interfaces c) related classes and interfaces d) none of the above

(xxii) Java package is a grouping mechanism with the purpose of [CO4]

- a) providing the library for Java program b) controlling the visibility of classes, interfaces and methods
- c) replacing header file used in C/C++ d) none of the above

(xxiii) A class can implement many interfaces but can extend [CO3]

- a) Only one class b) two classes c) three classes d) no limit

(xxiv) Which of the following is used to make use of an interface? [CO3]

- a) Import statement b) Extend c) Implements keyword
- d) none of the above

(xxv) String as a class in Java is defined in [CO3]

- a) java. io package b) java.awt package c) java. lang package
- d) java.applet package

(xxvi) StringBuffer sb = new StringBuffer (10);
In the code snippet, what is the number 10 shows? [CO3]

- a) index number for the string b) capacity c) reference number
- d) none of the above

(xxvii) The StringBuffer class provides flexible strings whose length can [CO3]

- a) increase only b) decrease only c) increase and decrease as per the need d) neither increase nor decrease-fixed at the initial stage

(xxviii) For one try block there may be [CO3]

- a) only 1 catch block b) only 2 catch blocks c) multiple catch blocks d) none of the above

(xxix) A thread can be created in Java either by extending _____ or by implementing _____.
[CO3]

- a) process, runnable interface b) suspend, resume c) thread class, runnable interface
d) none of the above

(xxx) String toString () method is used to convert [CO3]

- a) an integer data to string b) a class object into String object c) String object in a class object
d) none of the above

Group – B

(Multiple Choice Type Questions)

2. Choose the correct alternatives from the followings:

10 x 2 = 20

(i) The code given below

```
class Demo1{ }  
class Demo2 extends Demo1{ }  
class driver  
{  
    public static void main (String args[])  
    {  
        Demo2 d = new Demo1();  
    }  
}
```

[CO6]

- a) is not valid b) is perfectly valid c) is valid using abstract class d) none of the above

(ii) What is the output of the below java code?

[CO6]

```
class Demo  
{  
    int p = 2;  
}  
class driver  
{  
    public static void main (String [] args)  
    {  
        Demo t1 = new Demo ();  
        System.out.println("T1 before: " + t1.p);  
        t1.p = 4;  
        System.out.println("T1 After: " + t1.p);  
    }  
}
```

- a) T1 before: 4 T1 After: 4 b) T1 before: 2 T1 After: 2 c) T1 before: 2
T1 After: 4 d) Compiler error

(iii) What is the output of the below java code? [CO1]

```
class Demo
{
    int P;
}

class driver
{
    public static void main (String[] args)
    {
        Demo c1 = new Demo ();
        c1.P = 250;
        Demo c2;
        c2 = c1;
        c2.P = 300;
        System.out.println("P= " + c1.P);
    }
}
```

- a) P=0 b) P=250 c) P=300 d) Compiler error

(iv) What is the output of the below java code? [CO2]

```
public class Demo
{
    void Demo ()
    {
        System.out.println("Haldia");
    }
    Demo()
    {
        System.out.println("Kolkata");
    }
    public static void main (String[] args)
    {
        Demo d = new Demo ();
    }
}
```

- a) Haldia b) Kolkata c) No output d) Compiler error

(v) What is the output of the below java code? [CO2]

```
interface Bike
{
    int Price=1000;
}
public class Demo implements Bike
{
}
```

```

    void changePrice()
    {
        Price = 2000;
        System.out.print (Price);
    }
    public static void main (String[] args)
    {
        Demo B = new Demo ();
        B.changePrice();
    }
}

```

- a) 1000 b) 2000 c) Compiler error d) None of the above

(vi) What is the output of the below java code? [CO5]

```

class Food
{
    void price()
    {
        System.out.print("Food=$10 ");
    }
}
class Fruit extends Food
{
    void price()
    {
        super.price();
        System.out.print("Fruit=$20");
    }
}
public class Demo
{
    public static void main(String[] args)
    {
        Fruit su = new Fruit();
        su.price();
    }
}

```

- a) Food=\$10 Fruit=\$20 b) Food=\$10 Fruit=\$10 c) Food=\$20 Fruit=\$20 d) Compiler error

(vii) What is the output of the below java code? [CO5]

```

public class Demo
{
    public static void main(String[] args)
    {
        try
        {

```

```

        int p=4, q=0;
        int r = p/q;
        System.out.println("Exception occurred.");
    }
    catch(Exception e)
    {
        System.out.println("Catching an Exception.");
    }
}

```

- a) Exception occurred. Catching an Exception. b) Exception occurred. c) Catching an Exception.
 d) No output

(viii) What is an access modifier in Java? [CO1]

- a) An access modifier controls the visibility of variables, constants and methods of a class
 b) An access modifier can hide or show a variable or method to outside classes.
 c) Access modifiers help in implementing the Encapsulation feature of Object-Oriented Programming (OOPs). d) All the above

(ix) What is the output of the below java code? [CO5]

```

public class Demo
{
    public static void main(String[] args)
    {
        try
        {
        }
        catch(Exception e)
        {
        }
        finally
        {
            System.out.println("FINALLY block executed");
        }
    }
}

```

- a) No output b) FINALLY block executed c) Compiler error d) None

(x) What is the output of the below java code? [CO5]

```

class Bus
{
    public String toString()
    { return "Bus Object"; }
}
class Demo
{

```

```

public static void main(String[] args)
{
    Bus b = new Bus();
    System.out.println("Printing Object=" +b);
}
}

```

- a) Printing Object= b) Printing Object=null c) Printing Object=Bus Object
d) Compiler error

Group – C
(Short Answer Type Questions)

3. Attempt any four from the followings:

4 x 5 = 20

- i) Explain with the help of an example, how java gets benefited by using abstract class and interface. [CO3]
- ii) How can you create your own package and add classes in that? Explain with the help of an example. [CO3]
- iii) Write a program in Java to run a main thread and a child thread simultaneously. [CO3]
- iv) Explain Dynamic Method Dispatch with suitable example. [CO3]
- v) With a suitable example explain different uses of ‘this’ and ‘super’ keyword. [CO2]
- vi) Write short notes on (any two)
- a. Abstraction [CO1]
 - b. Polymorphism [CO3]
 - c. Thread life cycle [CO3]
 - d. Mutable string [CO2]

Palash Ray

Signature of the Paper Setter/Moderator

Answer Key:

Group – A

- | | | | | | |
|----------------|---------|----------|-----------|----------|----------|
| 1. (i)d | (ii)a | (iii)b | (iv)b | (v)b | (vi)a |
| (vii)c | (viii)a | (ix)c | (x)a | (xi)a | (xii)c |
| (xiii)d | (xiv)c | (xv)c | (xvi)c | (xvii)b | (xviii)c |
| (xix)c | (xx)d | (xxi)c | (xxii)b | (xxiii)a | (xxiv)c |
| (xxv)c | (xxvi)b | (xxvii)c | (xxviii)c | (xxix)c | (xxx)b |

Group – B

- | | | | | | |
|----------------|-------|--------|-------|------|-------|
| 2. (i)a | (ii)c | (iii)c | (iv)b | (v)c | (vi)a |
|----------------|-------|--------|-------|------|-------|

(vii)c

(viii)d

(ix)b

(x)c

3. (i)

(ii)

(iii)

Group – C
(iv)

(v)

(vi)