Total No. of printed pages = 4

63/2 (SEM-2) MCA 2.3

2022

MCA

(Theory Paper)

Paper Code : MCA 2.3

(Object Oriented Programming and Design with JAVA)

Full Marks – 75

Time – Three hours

The figures in the margin indicate full marks for the questions.

1. Answer the following questions : 1×5=5

(i) Which feature of OOP describes the reusability of code ?

(a) Data Abstraction (b) Encapsulation

(c) Polymorphism (d) Inheritance

(ii) Which loop always executes its body atleast once, even though the condition is not true

(a) for (b) do-while

(c) while (d) continue

[Turn over

(iii) _____ is used to exit from a loop.

(a) Continue (b) Quit

(c) Break (d) Exit

(iv) Which of the following is a special operator to allocate memory ?

(a) New (b) Old

(c) ++ (d) —

(v) Which of the following keyword is used to prevent inheritance ?

(a) Final (b) Catch

(c) Extends (d) Super.

2. Answer the following questions : 2×5=10

(i) Rewrite the following code by correcting the errors :

```
Class Main
{Public static void main (String [ ] args)
{system.out.println ("Enter two nos.")
int first = 10, second = 20
system.out.println (first+"  " + second)
int sum = first + second;
system.out.println ("The sum is" + sum)}
```


(ii) Define abstract methods and classes.

(iii) What is nesting of method ?

(iv) What is a model ?

(v) What are instance variables and methods ?

3. Answer any *four* from the following questions : 7×4=28

(i) What are constructors, why they are used ? Write a java program to demonstrate various types of constructors in java. 4+3=7

(ii) Explain static members, use a suitable example java program to illustrate them. 4+3=7

(iii) Draw a flowchart to show nesting of if-else statements with an example java program. 3+4=7

(iv) What is an interface ? What are the similarities and differences between interfaces and classes ? 3+4=7

(v) How can runtime polymorphism be achieved using dynamic method dispatch, explaining using an example ?

(vi) Explain errors and exceptions. List out any six java exceptions and mention why does they occur ? 4+3=7

4. Answer any *two* from the following questions : 10×2=20

(i) Describe the features of Object Oriented Programming in java.

(ii) Write the differenes between method overloading and method overriding. Use java programs to demonstrate them.

(iii) Describe the three models of Unified Modeling Language and the relationship among them.

5. Answer any *one* from the following questions : 12×1=12

(i) Explain different types of inheritances. Write a java program to achieve multiple inheritance.

(ii) Describe how exceptions can be handled. Write a java program for exception handling using try catch.