

2017**MCA****4th SEMESTER EXAMINATION****JAVA PROGRAMMING****PAPER — MCA-402***Full Marks : 100**Time : 3 Hours**The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words as far as practicable.**Illustrate the answers wherever necessary.**Answer Q. No. 1 and any four from the rest.*

1. Answer the following questions (Any five) : 2×5
- (a) What is the difference between a class and an object ?
 - (b) Java is 100% Object Oriented Programming Language.
– Comment.
 - (c) What is byte code ?
 - (d) What will happen when you compile and run the following code ?
`System.out.println(3|4).`

(Turn Over)

- (e) When do we declare a member variable method or class final ?
- (f) What is the use of super keyword ?
- (g) Why we need package ?
- (h) How do we invoke a constructor ?
2. (a) What is class ? How does it accomplish data hiding ?
2+3
- (b) What are the differences between a constructor and other member functions ?
3
- (c) When do we declare a method or class abstract ?
2
- (d) Compare and contrast concrete class and abstract class.
3
- (e) How many constructors can a class have ?
2
3. (a) Compare and contrast overloading and overriding methods ?
4
- (b) How does you accomplish to avoid overriding ?
2
- (c) Write short note on : (i) early binding, and (ii) late binding.
2×2
- (d) True/False : An abstract class may consist of concrete methods.
1

- (e) Write a program to calculate the distance travelled by a vehicle. The formula is $\text{distance} = ut + \frac{1}{2}(at)^2$, where 'u' is the initial velocity, 'a' is the acceleration and 't' is time. [using constructor and method].

4

4. Write short notes on *any three*:

3×5

- (a) Applet.
- (b) Dynamic Binding.
- (c) Abstraction.
- (d) Static method.
- (e) Access Specifiers.

5. (a) Describe different forms of inheritance with examples.

4

- (b) Differentiate between the following :

6

- (i) Abstract class and interface.
- (ii) Object and object reference.
- (iii) Static and final keyword.

- (c) Correct the code for overloading methods.

```
public class Figure
{
    public String draw(String s)
        { return "Figure Drawn" ;
        }
}
```

```
public void draw (string s) { }
    (double f) { } }
public void draw
```

- 2
- (d) Explain “public static void main (String[] args)” in brief. 3
6. (a) What is a package? Write names of five built-in packages. 2+2
- (b) Define user-defined package. Give an example. 2
- (c) How to implement a package in java? Illustrate with an example. 4
- (d) How to implement multiple inheritance in java? Illustrate with an example. 5
7. (a) Describe life cycle of an applet. 7
- (b) What are the differences between Applet and Application program? 4
- (c) Discuss about applet tag. 2
- (d) How to run an applet? 2

[Internal Assessment : 30 Marks]
