

2023

BCA 5th Semester Examination

OOPS Using JAVA

PAPER — 3101

Full Marks : 70

Time : 3 hours



The figures in the right-hand margin indicate 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 **five** from the rest.

1. Answer any **five** questions : 2×5=10

(a) Define OOP.

(b) Explain the term Data Abstraction and Encapsulation.

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(Turn Over)

(2)

- (a) What is JVM?
- (b) What is the significance of 'this' keyword in JAVA?
- (c) Why is class called an object factory?
- (d) Define package.
- (e) What is thread?
2. (a) Why is JAVA called *secure, portable* and *architecture neutral* language?
- (b) Explain 'enhanced for' loop with example.
- (c) What do you mean by the statement 'String object is immutable'? $6+4+2=12$
3. (a) What is constructor? Write down the characteristics of constructor.
- (b) Explain constructor overloading with example.
- (c) Explain the difference between 'this()' and 'super()' methods with examples.
- (d) What is garbage collection?

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

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(Continued)

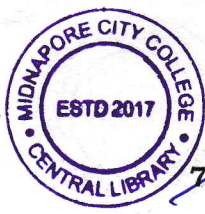
(3)

4. (a) What is inheritance?
- (b) Explain dynamic method dispatch with example.
- (c) Write down the difference between interface and abstract class.
- (d) How is multiple inheritance implemented in JAVA? Explain with example. $2+3+3+4=12$
5. (a) Discuss the life cycle of a thread in Java.
- (b) Create your own thread using 'Runnable' interface. $6+4+2=12$
- (c) Compare among *final, finally* and *finalize()*. $6+3+3=12$
6. (a) Create your own exception class where multiple types of exception can occur. Show how those exceptions can be handled by the use of multiple catch block.
- (b) Explain the difference between static method and non-static method with examples.
- (c) What is time delay loop? $6+4+2=12$

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(Turn Over)

Sum



(4)

7. (a) Discuss 'fall through' problem with example.
(b) Differentiate between 'next()' and 'nextLine()' methods.
(c) Explain *autoboxing* and *unboxing* with examples.
(d) When is explicit type conversion needed? Explain with example.
(e) Explain the string comparison methods 'equals()' and 'compareTo' with examples.

$$3+2+2+2+3=12$$

8. (a) Discuss the life cycle of an applet.
(b) What will be the output of the following code segment :
- (i) `int x=10;`
`y=++x+++++x--;`
`System.out.println ("x="+x+",y="+y);`
- (ii) `String s1="Hello";`
`String s2=new String(s1);`

`System.out.println(s1==s2+" "+s1.equals(s2));`
- (c) Differentiate between default and protected access specifier in JAVA.

$$6+(2+2)+2=12$$

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