Voc(Sem-II) — BCA
(CC –3)

# 2023

*Time : 3 hours*

*Full Marks : 70*

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

*The figures in the margin indicate full marks.*

*Answer from **all** the Sections as directed.*

## Section – A

1. Choose the correct answer of the following :

    1×10 = 10

    (a) Which of the following options leads to the portability and security of Java ?

    (i) Bytecode is executed by JVM

    (ii) The applet makes the Java code secure and portable

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(iii) Use of exception handling

(iv) Dynamic binding between objects

(b) In which memory a String is stored, when we create a string using new operator ?

    (i) Stack

    (ii) String memory

    (iii) Heap memory

    (iv) Random storage space

(c) How many threads can be executed at a time ?

    (i) Only one thread

    (ii) Multiple threads

    (iii) Only main (main()method) thread

    (iv) Two threads

(d) Number of primitive data types in Java are :

    (i) 6           (ii) 7

    (iii) 8         (iv) 9

(e) What is Runnable ?

    (i) Abstract class

    (ii) Interface

(iii) Class

(iv) Method

(f) Which of the following exception is thrown when divided by zero statement is executed ?

(i) NullPointerException

(ii) NumberFormatException

(iii) Arithmetic Exception

(iv) None of these

(g) Which class in Java is used to take input from the user ?

(i) Scanner

(ii) Input

(iii) Applier

(iv) None of these

(h) Which Java method is used to convert an object to string ?

(i) createString ()

(ii) toString ()

(iii) object.string()

(iv) newString()

(i) Which keyword is used to inherit classes in Java ?

(i) Extends

(ii) Inheritance

(iii) isChild

(iv) None of these

(j) What is the full form of AWT ?

(i) Absolute Window Toolkit

(ii) Abstract Window Toolkit

(iii) Absolute Wear Kit

(iv) Abstract Window Tools

2. State 'True or False' of the following : 1×10 = 10

(a) A final class cannot extend other classes. F

(b) JDB is used to find and fix bugs in the Java programs.

(c) The sleep() method does not release any locks of an object for a specific time or until an interrupt occurs.

(d) A package is a collection of class and interface.

(e) Implicit return type of constructor is the class object in which it is defined.

(f) The throw is a keyword introduce in Java for exception handling.

(g) The Java program can accept input from the command line.

(h) Objects in Java are Reference Variables.

(i) Wrapping up of data and related functions into a single entity is called encapsulation.

(j) Deadlock in Java is a condition when two or more threads try to access the same resources at the same time.

## Section – B

2. Answer any **four** questions of the following :

$$2\tfrac{1}{2} \times 4 = 10$$

(a) What is the purpose of Static methods and Static variables ?

(b) What is Final Keyword in Java ? Give an example.

(c) What is the difference between an Abstract Class and Interface in Java ?

(d) What is the difference between throw and throws keyword ?

(e) How does String class differ from String Buffer class ?

(f) What is constructor ? What are its special properties ?

### Section – C

3. Answer any **four** questions of the following :

$$10×4 = 40$$

(a) What is thread ? Explain life cycle of thread with examples.

(b) Describe various components in swings.

(c) Write a Java program to count the total number of vowels and consonants in a string.

(d) Write a Java program to calculate factorial of given number.

Contd.

(e) Write an AWT GUI application containing components - a label with caption Counter, a Textfield and a Button with caption Count. Each time the "Count" button is clicked, the counter value shall increase by 1 and it is displayed in TextField.

(f) Write a program to demonstrate different keyboard handling events.

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