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44 (4) BCA 4·3

**2023**

## **PROGRAMMING IN JAVA**

Paper : 4·3

Full Marks : 80

Time : Three hours

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

1. Answer the following questions :  $2 \times 10 = 20$ 
  - (a) What is the difference between JDK, JRE and JVM ?
  - (b) List the features of Java Programming Language.
  - (c) Define JAVA.
  - (d) Define method overriding.
  - (e) Define class and object with example.
  - (f) Give an example of method overloading.

*Contd.*

- (g) Give an example of string concatenation.
  - (h) Define JAVA.
  - (i) What is the constructor ?
  - (j) Define Java virtual machine.
2. (a) Explain the different operators used in Java. 5
- (b) What is method overloading ? Explain with proper programming example. 5
- (c) What is an operator ? Explain the arithmetic, relational, bitwise, conditional and assignment operators. 10
3. Distinguish between the following : **(any five)**  
2×5=10
- (a) Input stream and Reader class
  - (b) Try and catch block
  - (c) Class methods and constructor
  - (d) Class and Interfaces
  - (e) Thread and Multithreading
  - (f) Output stream and writer class

4. Answer from the following :
- (a) Briefly discuss the exception handling mechanism in Java. 5
  - (b) What is Java package? Write the advantages of Java packages. 5
  - (c) What is protected members? Explain with example. 5
  - (d) Write a Java program to input a string from the keyboard and count the number of upper case characters present in the string. 5
5. Write short notes on : **(any two)** 10
- (a) Inheritance
  - (b) Primitive datatypes of Java
  - (c) ODBC
  - (d) Life cycle of an Applet
  - (e) Event handling mechanisms used in Java
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