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44 (5) JVPR BCA-HC-5016

2021

(Held in 2022)

JAVA PROGRAMMING

Paper : BCA-HC-5016

Full Marks : 60

Time : Three hours

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

1. Answer the following questions as directed:
1×7=7

(a) Java is a strongly typed language.
(State true **or** false)

(b) Primitive data types of Java are completely object-oriented.
(State true **or** false)

(c) Java uses _____ to represent characters.

(i) ASCII

(ii) Unicode

(iii) EBCDIC

(iv) BCD

(Choose the correct option)

Contd.

- (d) In Java, all class objects must be dynamically allocated.
(State true **or** false)
- (e) The _____ class is the parent class of all the classes in Java by default,
(Fill in the blank)
- (f) To create a new thread, the Java program will have to implement the _____ interface. (Fill in the blank)
- (g) To guard against and handle a run-time error, code should be enclosed inside a _____ block. (Fill in the blank)

2. Define the following terms : $2 \times 4 = 8$

- (a) Java virtual machine
(b) Finalize () method
(c) Package
(d) Interface

3. Answer **any three** of the following questions : $5 \times 3 = 15$

- (a) Give brief description of primitive types of Java.
- (b) What are the different types of for loops in Java ? Describe with suitable example.

(c) Give brief description of the following keywords of Java :

(i) instanceof

(ii) protected

(iii) this

(iv) super

(v) new

(d) Differentiate between method overloading and method overriding with suitable example.

(e) Give brief description of the following built-in classes derived from Throwable class :

(i) Exception

(ii) RuntimeException

(iii) Error

4. Answer **any three** of the following questions :

10×3=30

(a) Write a program to create a class shape with properties length and breadth. Extend the class to rectangle and square and find the area of the rectangle and the square. Use input() method to take input using keyboard.

(b) Explain static method, static variables, and static initialization block using suitable example.

(c) Write a program to extract a portion of a character string and print the extracted string. Assume that m characters are extracted starting with the n th character.

(d) Briefly describe the life cycle of a thread. How do we start a thread? How to set priorities for threads? Illustrate the use of `yield()` and `sleep()` method of Thread class. $3+1+2+4=10$

(e) What is an applet? How do applets differ from application programs? Discuss the steps involved in developing and running a local applet.

$2+2+6=10$

(f) Briefly describe delegation event model.

Distinguish between —

(i) `InputStream` and `Reader` classes,

(ii) `OutputStream` and `Writer` class.

$4+3+3=10$