

S.No. : 288

BCS 3601

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Following Paper ID and Roll No. to be filled in your Answer Book.

PAPER ID : 33225

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## B. Tech. Examination 2021-22

(Even Semester)

### CORE AND ADVANCE JAVA

**Time : Three Hours]**

**[Maximum Marks : 60**

**Note :-** Attempt all questions.

#### SECTION-A

1. Attempt all parts of the following :  $8 \times 1 = 8$ 
  - (a) What is the meaning of first line of java program 'public static void main string args (7)' ?
  - (b) Define type costing and type conversion.
  - (c) What is the need of super keyword in JAVA?
  - (d) List the different stages in the life cycle of a thread.
  - (e) Why JAVA does not support multiple inheritance?

**[P. T. O.]**

- (f) What are the types of packages in JAVA? How to create a user defined package?
- (g) What is the difference between inputstream and output stream in Java?
- (h) Explain the step involved in creating and executing a java program with an example.

### SECTION – B

2. Attempt any two parts of the following :  $2 \times 6 = 12$

- (a) What are the various access specifiers in JAVA? Explain using examples. How access modifiers effect the visibility of a member in different access locations?
- (b) What is an exception in Java? What is the difference between checked and unchecked exceptions in Java? A university has applied promotion criteria for students. According to criteria a student cannot be promoted to next academic year if he has less than 4.5 CGPA. A developes is trying to implement this situation using exception handling in Java. Write a correct Java code to help him.

- (c) What is string pool in Java and why string is immutable? Write a Java program to find length of a string.
- (d) Explain the various types of layout managers in Java. Differentiate between flow layout and border layout with examples.

### SECTION - C

**Note :-** Attempt all questions. Attempt any two parts from each questions. 5×8=40

3. (a) What is method overloading? How is it different from method overriding? Explain with an example.
- (b) Explain the meaning of the following terms :
- (i) Garbage collection
  - (ii) Constructor overloading
  - (iii) This keyword
- (c) Create a class customer with the following attributes : c name, c id, c phone, c address. Create a method add customer ( ) and add all the attributes as user input. Create another method as display ( ) and print all the attributes. Create 10 objects as an array.

4. (a) What are the different types of inheritance supported by Java? Explain each of them in detail with the help of example.

(b) (i) What is interface in Java? How is interface implemented?

(ii) What is an abstract class? What is its use in Java?

(c) What are the two ways of implementing thread in Java? If you create two threads in your program how many threads actually run? Explain the complete flow of execution of threads inside a program.

5. (a) What is the main difference between readers/writers and input/output streams? Give a few subclasses of reader and writer class. Write a program to create a text file using Java file writer.

(b) (i) Write a program in Java to remove or trim all white spaces from a string in Java.

(ii) Write a program in Java to count vowels and consonants in string.

- (c) Explain in detail that makes java the most popular, preferable language over the years. Explain atleast five features of Java.
6. (a) Explain life cycle of an applet with suitable example. Create an applet that receives three numeric values as an input from user and then displays the largest of these on the screen. Write a sample HTML page to include this applet.
- (b) Define a class electricity bill that contains consumer details as follows :

Data member / Instance variable :

- C no (long) : Consumer number
- C name (string) : Consumer name
- c add (string) : Consumer address
- N (integer) : to store number of units consumed

Member functions / method :

- (i) Elec Bill ( ) : 3 Parametrised constructor to assign values to consumer number, consumer name and consumer address.

*[ P. T. O. ]*

(ii) Void display ( ) : Display consumer details.

(iii) Void : Calculate the monthly bill  
calcualte ( ) of consumer according to  
followign slabs.

| No. of units consumed | Rate                                    |
|-----------------------|-----------------------------------------|
| 1 – 100               | ₹ 500 rental charges only.              |
| 101 – 200             | ₹ 1 per unit + ₹ 500 rental charges.    |
| 201 – 300             | ₹ 1.20 per unit + ₹ 500 rental charges. |
| Above 300             | ₹ 1.50 per unit + ₹ 500 rental charges. |

(c) Differentiate between AWT and Swings. List out any 10 AWT classes and their syntax. Write a java program to implement mouse events.

