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CSE 181404

Roll No. of candidate

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2022

B.Tech. 4th Semester End-Term Examination

Computer Science and Engineering

JAVA PROGRAMMING

(New Regulation & New Syllabus)

Full Marks – 70

Time – Three hours

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

Answer question No. 1 and any four from the rest.

1. Answer the following : (MCQ/Fill in the blanks) :

(10 × 1 = 10)

(i) Arrays in java are -

- (a) Object reference
- (b) Object
- (c) Primitive data type
- (d) None

(ii) Identify the corrected definition of a package.

- (a) A package is collection of classes
- (b) A package is collection of classes and interfaces
- (c) A package is collection of interfaces
- (d) A package is collection of editing tools

(iii) Identify the keyword among the following that makes a variable belong to a class rather than being defined for each instance of the class.

- (a) Final
- (b) Volatile
- (c) Static
- (d) Abstract

[Turn over

- (iv) Which of the following exception is thrown when divided by zero statement is executed?
- (a) Arithmetic Exception
 - (b) Null Pointer Exception
 - (c) Number Format Exception
 - (d) None of these
- (v) Identify the output of the following code:
- ```
String str = "abcde";
System.out.println(str .substring(1, 3));
```
- (a) Abc
  - (b) bcd
  - (c) bc
  - (d) cdc
- (vi) Which of the following is the valid syntax:
- (a) Char ch[] = new Char();
  - (b) Char []ch = new Char[];
  - (c) Char ch[] = new Char(5);
  - (d) Char []ch = new Char[5];
- (vii) Which of the following is true?
- (a) "X extends Y" if and only if X is a class and Y is an interface
  - (b) "X extends Y" if and only if X is an interface and Y is a class
  - (c) "X extends Y" if X and Y are either both classes or both interfaces
  - (d) "X extends Y" is correct for all combinations of X and Y being classes and/or interfaces
- (viii) What is byte code in Java?
- (a) Code generated by java compiler
  - (b) Code generated by java virtual machine
  - (c) Name of java source code file
  - (d) Block of code written inside a class
- (ix) Which of these operators is used to allocate memory to array variable in Java?
- (a) Melloc()
  - (b) Alloc
  - (c) New
  - (d) New melloc

- (x) Modulus operator (%) can be applied to which of these?
- (a) int
  - (b) Floating-point numbers
  - (c) Both (a) and (b)
  - (d) None of these
2. (a) Why Java is called Machine Independent language. Explain briefly. (5)
- (b) Discuss about the various important features exhibited by java as an Object-oriented programming language. (10)
3. (a) What is an applet? Describe the different stages in the life cycle of an Applet. (2 + 3 = 5)
- (b) What is an exception? What are checked and unchecked exceptions? (2 + 3 = 5)
- (c) Discuss briefly about how exceptions are handled in Java. (5)
4. Differentiate between: (3 × 5 = 15)
- (a) Method overloading V s. Method Overriding
  - (b) Application V s. Applet
  - (c) Class V s Interface
5. (a) What is an interface? Write a java program to create an interface to calculate the area of a shape and implement it in a suitable example. (2 + 5 = 7)
- (b) What is a thread? Explain . briefly about the different states of a thread with the state transition diagram. (3 + 5 = 8)
6. (a) List out the differences between AWT and Swings. Also, explain about any two Layout Managers with example programs. (3 + 4 = 7)
- (b) Write a java program using JDBC to store the records of 3 students in the database showing the following operations: (8)
- (i) Insert
  - (ii) Delete
  - (iii) Update and
  - (iv) Select
7. (a) Write a program to create a sample form using Awt and Swing components for registering students to a college database. (7)
- (b) Write a simple program in Java where a Client Program requests the Server to add two Integers and Return the sum to the client. (8)