Candidate Seat no…….

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY

Fourth Semester of B. Tech (CE/CSE) Examination

Nov-Dec 2018

CE241 Java Programming

Date: 21.11.2018, Wednesday **Time: 10.00 a.m. To 01.00 p.m.** **Maximum Marks: 70**

Instructions:

1. The question paper comprises two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.

SECTION – I

Q - 1 **Answer the following questions.**

A. State whether each of the following is true or false. If false, explain why. **[01]**

a) A generic method cannot have the same method name as a nongeneric method.

b) A generic method can be overloaded by another generic method with the same method name but different method parameters.

B. What is a default method in interface and when do we use it? Give example. **[02]**

C. What will be the result of compiling and running the following program? **[02]**

```
public class ListDemo {
   public static void main (String[] args) {
      List<String> l = new ArrayList<String>(5);
      l.add("Java");
      l.add("Python");
      l.add("PHP");
      l.add("Ruby");
      l.add("React");
      List<String> range = new ArrayList<String>();
      range = l.subList(2, 4);
     System.out.println(range);
}
```

D. What are the three parts of a Lambda Expression? What is the type of Lambda Expression? **[03]**

E What is Generic in Java? What are the benefits of using generic types? **[03]**

Q – 2.A What are exceptions and how are they handled in Java? Give an example. **[04]**

Q – 2.B **Answer the following questions [Any Two].** **[08]**

A. Differentiate:
(i) Enumeration and Iterator.
(ii) Vector and ArrayList

B. Define Thread. Draw and explain different stages of Thread.

C. What is a channel and selector in file? What capabilities does the Channel interface provide? Give example.

Q - 3 Answer the following questions. [Any Two]. **[12]**

A. Write a generic method that takes a string and returns the number of unique characters in the string. Use collections where appropriate.

B. Write an interactive program to compute the square root of a number. The input values must be tested for validity. If it is negative, the user-define method MySqrt() should raise exception.

C. Write a program to create two threads, one thread will print odd numbers and second thread will print even numbers between 1 to 100 numbers.

SECTION – II

Q - 4 Answer the following questions.

A. What are the key elements of JAVA program structure? Explain each element in brief. **[02]**

B. Differentiate Abstract class and interface with suitable example. **[02]**

C. What will be the result of the following lines of code? **[03]**

1. System.out.println(010+'a'+'b');
2. int a,b,c,d; a=b=c=d=20; a+=b-=c*=d/=20;
   System.out.println(a+" "+b+" "+c+" "+d);
3. int i = (byte) + (char) - (int) + (long) - 1;
   System.out.println(i);

D. What will be the result of compiling and running the following programs? **[02]**

1.
```
public class Tailor {
public static void main(String[] args) {
byte[][] ba = {{1,2,3,4}, {1,2,3}};
System.out.println(ba[1].length + " " +
ba.length);
  }
}
```

2.
```
public class Polymorphism2 {

public static void main(String[] args) {
A ref1 = new C();
B ref2 = (B) ref1;
System.out.println(ref2.g());
} }
class A {
private int f() { return 0; }
public int g() { return 3; }
}
class B extends A {
private int f() { return 1; }
public int g() { return f(); }
}
class C extends B {
public int f() { return 2; }
}
```

E. What will be the result of compiling and running the following programs? **[02]**

```
1. public class Flipper {
public static void main(String[] args) {
String o = "-";
switch("FRED". substring(1,3)) {
case "yellow":
o += "y";
case "red":
o += "r";
case "green":
o += "g";
} System.out.println(o); }
```

```
2. public class Feline {
public static void main(String[] args) {
Long x = 42L;
Long y = 44L;
System.out.print(" " + 7 + 2 + " ");
System.out.print(foo() + x + 5 + " ");
System.out.println(x + y + foo());
}
static String foo() { return "foo"; }
}
```

Q – 5.A Differentiate between method overloading and method overriding with suitable examples. **[06]**

Q – 5.B A palindrome is a text phrase that is spelled the same backward and forward. The word "redivider" is a palindrome, since the word would be spelled the same even if the character sequence were reversed. Write a program that takes a string as an argument and reports whether the string is a palindrome. **[06]**

OR

Q – 5.A What are final class, final function and final variable in java? Explain with example. **[06]**

Q – 5.B Write a program to replace all "word1" by "word2" from a file1, and output is written to file2 file and display the no. of replacement. **[06]**

Q – 6. Answer the following. [Attempt any Two] **[12]**

A. Define package in java. List out steps to create and compile user defined package with an example.

B. Discuss various level of access protection for packages and their implications with an example.

C. What role do interface play in Java? How can interface be used to support multiple inheritance? Give an example

D. Explain following terms with example:
(i) Nested Class (ii) Anonymous Inner Class