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Odd Semester Examination – 2024: BCA/BSC 3rd Year 5th Semester)

Paper: Introduction to Java Programming (BCA SEE521)

Roll No: _____

TIME: 2.5 Hours

MAX. MARKS: 60

Note: Follow proper numbering and Java code conventions while answering the questions.

SECTION A (20 Marks) All questions are compulsory. Each question is worth 1 mark.

Answer these questions in (True/False)

1. The primitive boolean data type in Java has two values. They are 0 and 1. (T/F)
2. The range of byte data type in Java is -128 to 127. (T/F)
3. A line of code if surrounded by a try block must be followed by catch or finally block or both. (T/F)
4. Package in Java avoids namespace collision and specifies a class's fully qualified name. (T/F)
5. Is it a valid code, Where Car is an abstract class and JeepWrangler is a concrete class?
class JeepWrangler implements Car { // Some code here }. (T/F)
6. The command "javac" is used to run (interpret) a Java program. (T/F)
7. It is a valid line of code that should compile successfully in Java. float varFloat = 5.6F; (T/F)
8. All variables in the "interface in Java" are implicitly public, final, and static together. (T/F)
9. Are these valid lines of code in Java? (T/F)

Student s1=new Student(); System.out.println(s1);

10. Scanner class in Java is in "java.util" package (T/F).
11. A static variable in Java does not belong to a specific instance of the class. (T/F)
12. We can create an object of an abstract class using the "new" operator. (T/F)
13. A class declared as final leads to compilation error. (T/F)
14. We can create an object of an interface using the "new" operator. (T/F)
15. It is a valid code? Object obj=new String("Good morning BCA Students"+" Good luck"); (T/F)
16. "Protected" methods could be accessed only from within the same package in Java. (T/F)
17. A class in Java may have a "private" visibility specifier while defining the class. (T/F)
18. This is an incorrect array declaration? int [] arr = new int[5] ; (T/F)
19. Classes in "java.lang" package do not require import. (T/F)
20. Java is a purely interpreted language. (T/F)

SECTION – B (20 Marks) -- Attempt any FOUR Questions. Each question carries 5 marks.

Question	CO	BL
Q1. Explain constructor overloading with code examples.	1	L2
Q2. What happens when a class is declared "final". Explain with a suitable example of your choice. Give an example from Java built-in classes, which is declared final.	3	L1
Q3. What is inheritance in java? Assume a class "Animal" with methods eat() and move(). Explain inheritance by giving the code of the "Animal" class and of the "Dog" and "Cat" as its derived class.	2	L4
Q4. Consider the following code example in Java <pre> 1. class Base { 2. final public void show() { 3. System.out.println("Base-show() called"); 4. } 5. } 6. class Derived extends Base { 7. public void show() { 8. System.out.println("Derived-show() called"); 9. } 10. } 11. class Demo { 12. public static void main(String[] args) { 13. Base b = new Derived(); 14. b.show(); 15. } 16. }</pre> Give the output and discuss the reason in detail.	3	L3
Q5. What is a universal superclass in Java? Explain its purpose with an example.	5	L1
Q6. Define Exceptions in Java? Give a proper code example to explain "try" and "catch" blocks in Java.	4	L5

SECTION – C (20 Marks) -- Attempt any TWO Questions. Each question carries 10 marks.

Question	CO	BL
Q1. Create a class "Student" that has "name", "enrolmentNo" and "marksObtained" as three fields. Follow encapsulation and data-hiding. Create a class TestStudent with the main method that can read the student's details and marks from the keyboard for any number of students until we type exit on the command prompt. Demonstrate from within the main method of TestStudent class.	2	L4
Q2. Explain static fields and methods in Java with suitable code examples. Explain when would you prefer to create a static method instead of a non-static method	5	L4
Q3. Differentiate between an abstract class and an interface in Java. When would you prefer to use an abstract class instead of an interface? Explain with a suitable coding example.	3	L4
Q4. a)What is the difference between "super" and "super()" in Java. Explain with code example. b)Give a code example to handle a <u>StringIndexOutOfBoundsException</u> ?	2	L6