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Question Paper Code: 41243

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2016

Fourth Semester

Computer Science and Engineering

14UCS403 - JAVA PROGRAMMING

(Common to Information Technology)

(Regulation 2014)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Consider public class MyClass{ public MyClass(){/*code*/} // more code... } To instantiate MyClass, you would write?
 - (a) MyClass mc = new MyClass();
 - (b) MyClass mc = MyClass();
 - (c) MyClass mc = MyClass;
 - (d) MyClass mc = new MyClass;
2. What is byte code in the context of Java?
 - (a) The type of code generated by a Java compiler
 - (b) The type of code generated by a Java Virtual Machine
 - (c) It is another name for a Java source file
 - (d) It is the code written within the instance methods of a class. 8
3. Which of these access specifier can be used for an interface?
 - (a) Public
 - (b) Protected
 - (c) private
 - (d) all the above
4. Which of these can be used to fully abstract a class from its implementation?
 - (a) Objects
 - (b) Packages
 - (c) Interfaces
 - (d) none of these

5. If an exception is generated in try block , then it is caught in ____ block.
(a) finally (b) throw (c) throws (d) catch
6. Which function of pre-defined class Thread is used to check whether current thread being checked is still running?
(a) is Alive () (b) Join () (c) is Running () (d) Alive ()
7. Which class provides many methods for graphics programming?
(a) java.awt (b) java.Graphics
(c) java.awt.Graphics (d) none of these
8. Which is the container that doesn't contain title bar and MenuBars. It can have other components like button, textfieldetc?
(a) Window (b) Frame (c) Panel (d) Container
9. Which type of driver converts JDBC calls into the network protocol used by the database management system directly?
(a) Type 1 driver (b) Type 2 driver
(c) Type 3 driver (d) Type 4 driver
10. Which of these classes can be used to implement input stream that uses a character array as the source
(a) Buffered Reader (b) File Reader
(c) Char Array Reader (d) File Array Reader

PART - B (5 x 2 = 10 Marks)

11. Differentiate a constructor and a method.
12. Why is multiple inheritance using classes a disadvantage in java?
13. Why do we need run () and start () method both in thread class? Can we achieve it with only run method?
14. Code a graphics method in java to draw the String "Hello World" from the coordinates (100, 200).
15. Infer the usage of Buffered Reader and Buffered Writer.

PART - C (5 x 16 = 80 Marks)

16. (a) Define the Rectangle class that contains: Two double fields x and y that specify the center of the rectangle, the data field width and height , A no-arg constructor that creates the default rectangle with (0, 0) for (x, y) and 1 for both width and height. A parameterized constructor creates a rectangle with the specified x, y, height and width. A method getArea() that returns the area of the rectangle. A method getPerimeter() that returns the perimeter of the rectangle. A method contains (double x, double y) that returns true if the specified point (x, y) is inside this rectangle. Write a test program that creates two rectangle objects. One with default values and other with user specified values. Test all the methods of the class for both the objects. (16)

Or

- (b) (i) State the use of constructor and finalize() method in java using a programming example. Show how garbage collection is achieved here. (8)
- (ii) Why do we need static members and how to access them? Explain it with clear example. (8)
17. (a) With suitable examples explain how packages can be created, imported and used. Also elaborate on its scope. (16)

Or

- (b) Define an interface “IntOperations” with methods to check whether an integer is positive, negative, even, odd, prime and operations like factorial and sum of digits. Define a class MyNumber having one private int data member. Write a default constructor to initialize it to 0 and another constructor to initialize it to a value (Use this). Implement the above interface. Create an object in main. Use constructors to pass a value to the object. (16)
18. (a) Write an application that throws and catches an Arithmetic Exception when you attempt to take the square root of a negative value. Prompt the user for an input value and try the Math.sqrt() method on it. The application either displays the square root or catches the thrown Exception and displays an appropriate message. (16)

Or

(b) With illustrations explain multithreading, interrupting threads, thread states and thread properties. (16)

19. (a) Write a program to simulate the layout and working of a calculator. (16)

Or

(b) Write a program to simulate the layout and working of a calculator. Write a program for calculator using grid layout. (16)

20. (a) Describe about the different input and output streams and their classes. (16)

Or

(b) Write a java program from an banking application using JDBC (Consider 5 customers, create account number and types, set some minimum balance, do credit and operation and print out the consolidated report for month wise transaction). (16)
