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**TERM END EXAMINATIONS (TEE) – December 2022**

Programme	: MCA	Semester	: Fall 2022-23
Course Name	: Object Oriented Programming using Java	Course Code	: MCA1003
Faculty Name	: Dr. Kanchan Lata Kashyap	Slot / Class No	: A11+A12+A13/ 0790
Time	: 3 Hrs.	Max. Marks	: 100

**Answer ALL the Questions**

Q. No.	Question Description	Marks
	<b>PART A – (60 Marks)</b>	

- 1/ (a) Define a class named as **dailywagesWorker** with following members 7  
**Data members:**

Worker\_name : String

Worked\_hour : float

Wage\_rate : float

Total\_wage : float

Calculate\_wage( ) : a method to calculate the total wages

**Member methods:**

Input\_data( ) : a method to enter the values of all data members

Display\_data ( ) : a method to display values of all data members

- (b) Discuss the use of '**final**' keyword in JAVA with respect to data members, methods, and class. 5

OR

- (c) Why method overloading is important in JAVA? Demonstrate the use of constructor overloading with suitable example. 12

- 2/ (a) How multiple inheritance can be implemented in JAVA. Demonstrate it with suitable example. 8

- (b) Differentiate between abstract class and interface. 4

OR

- (c) Create a Package '**ItemPack**' which includes Class '**ITEM**' with following attributes: 12

**Data Members:**

- ItemCode, : String
- ItemName, : String
- Rate : Double
- quantity : int

**Member methods:**

Public void displayItems().

Accept the Item details using Constructor. Also Create an Interface having method **calculateAmount()** with **Rate** and **quantity** as arguments. Create a class, which overrides these methods.

- 3/ (a) Write a multithreading program by using runnable interface in which run() method should perform the following task: 12
- Display greeting message for 10 times (such as hi, hello, good morning)
  - Wait for 1000 miliseconds

OR

- (b) Why it is important to handle Run-time exception? 4
- (c) Which keyword can be used to throw user defined exception? Write a user defined exception for Negative Value Exception if the user enters a negative value. 8

- 4 (a) Write a program to read content of file1 and display the number of characters, words and blank spaces. 7

- (b) Differentiate byte stream and character stream classes in JAVA. 5

OR

- (c) How JAVA application can be connected with a database. Write the various steps of JDBC connectivity. 12

- 5/ (a) Write a JAVA Program to implement an AWT based calculator with basic operations, square, and cube operation. 12

OR

- (b) Differentiate between **Array** and **ArrayList** in JAVA. 4
- (c) Write suitable program to create two ArrayList, reverse the order of both list, and merge elements of both list into third ArrayList in sorted order. 8

**PART B – (40 Marks)**

- 6/ Write a method to compute the distance between two points and use it to develop another method that will compute the area of the triangle whose vertices are A(x1, y1), B(x2,y2), and C(x3, y3). Use these methods to develop a method which returns a value 1 if the point (x, y) lies inside the triangle ABC, otherwise a value 0. 8



- 7/ How visibility control can be given to access the various data members and member methods in JAVA. 8
- 8/ How priority of threads can be given in JAVA. Write a java program to implement setPriority() method in multithreading. 8
- 9/ Write a JAVA program to read the contents from file1, perform case conversion operation (lowercase into uppercase and vice-versa), and copy the converted contents into another file by using FileReader and FileWriter class. 8
- 10/ Demonstrate the use of following GUI components 8  
(i) JComboBox (ii) JRadioButton, (iii) JCheckBox , and (iv) JButton

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