

**GANPAT UNIVERSITY****B. Tech. Semester: III Computer Engineering/Information Technology****CBCS (NEW) Regular Examination November-December 2015****2CE304/2IT304: Object Oriented Programming****Time: 3 Hours****Total Marks: 60**

- Instruction:**
1. Attempt all questions.
  2. Figures to the right indicate full marks.
  3. Each section should be written in a separate answer book.
  4. Assume necessary data when needed.

**SECTION: I**

- Q.1** (A) Distinguish between the following terms. (6)
- 1) Object and Class
  - 2) Data abstraction and Data encapsulation
  - 3) Implicit and Explicit type-casting
- (B) Define inheritance. What is need of it? Explain types of inheritance. (4)

**OR**

- Q.1** (A) What are command line arguments? How are they useful? Write a Java program to find whether entered number is prime or not using command line arguments. (6)
- (B) Explain platform-independent, portable, secure and multithreaded features of Java. (4)

- Q.2** (A) Design a class to represent a bank account having data members like name of the depositor, account number, type of account, balance and following methods: (5)
- 1) To assign initial values
  - 2) To deposit an amount
  - 3) To withdraw an amount after checking the balance
  - 4) To display the name and balance.
- (B) Create abstract class called Shape having method area(). Create three subclasses of Shape named Triangle, Rectangle and Circle which override area() to calculate the area of respective shape. Use necessary constructors. (5)

**OR**

- Q.2** (A) Write syntax of one and two-dimensional array. Write a program to find common elements between two integer arrays of size 10. (5)
- (B) Write a program to compare two objects by passing object as a parameter and return the result. Is it example of call by reference? If yes then why? (5)
- Q.3** (A) Explain static variable and static method in Java. Write a program to demonstrate the use of static variable and method which also shows difference between instance and static variable. (5)
- (B) What is method overloading? Create a program to perform addition of two decimal values and addition of two strings using method overloading. (4)
- (C) In a subclass, what if you want to use both the superclass version and your overriding subclass version of a method? (1)



## SECTION: II

- Q.4 (A) Explain access/visibility modifiers in Java. (5)  
(B) Explain exception handling mechanism. Write a program to catch NumberFormatException. (5)

OR

- Q.4 (A) Define Thread. Differentiate between multitasking and multithreading. (5)  
(B) State the use of following terms: (5)  
1) package  
2) garbage collection  
3) finally  
4) instanceof  
5) this

- Q.5 (A) Write a program to demonstrate the inheritance relations for Figure 1. Decide which are classes and/or interfaces among A, B, C and D. (6)

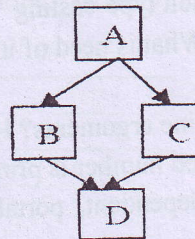


Figure 1

- (B) Write a program to catch multiple exceptions i.e. ArithmeticException and ArrayIndexOutOfBoundsException. (4)

OR

- Q.5 (A) Write a program that illustrates interface inheritance. Interface P is extended by P1 and P2. Each interface declares one constant and one method. Class Q implements P1 and class R implements P2. Instantiate Q and R which will invoke each of its methods. Each method displays one of the constants. (6)  
(B) Write a program to create new exception subclass that throws exception if the sum of two integers is greater than 99. (4)

- Q.6 (A) Explain life cycle of applet. Create an applet to print "Welcome to Applet". (6)  
(B) Differentiate between String and StringBuffer class. Explain any two methods of String class. (4)

END OF PAPER