Question Paper

Exam Date & Time: 04-Jun-2018 (09:30 AM - 12:30 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

INTERNATIONAL CENTRE FOR APPLIED SCIENCES
II SEMESTER B.Sc.(Applied Sciences) DEGREE MAKE UP- EXAMINATION - MAY / JUNE 2018
DATE: 4 JUNE 2018
TIME : 9.30 AM TO 12.30 PM
Java Programming [ICS 121]

Marks: 100 **Duration: 180 mins.**

Answer ANY FIVE full Questions.
Missing data, if any, may be suitably assumed

1)	A)	With an example java program, explain the concepts of abstraction, encapsulation, inheritance and polymorphism.	(10)
	B)	What is the need for for-each version of for loop in Java? What are the limitations of for-each? Write a Java code to print second largest element of the 1D array.	(10)
2)	A)	Why main( ) is always static in Java? Demonstrate the usages of static variable, method and blocks with example.	(12)
	B)	Explain type conversion, casting and type promotion rules of java.	(8)
3)	A)	Create a class called student with name, reg_no and marks in 5 subjects as member variables. Use constructor to initialize these variables. Provide a method called average which will calculate the average marks of the student. Write another class which has main method, which will create an array of 5 objects of student class. Initialize all these objects by receiving relevant data from keyboard. From main( ) , display the details of student who has the highest average.	(15)
	B)	What is instance variable hiding problem in inheritance? How do you solve this?	(5)
4)	A)	List the differences between method overloading and overriding in Java with the help of example code.	(15)
	B)	Write complete Java code to add three numbers taken from command line argument?	(5)

5) A) What is a package? Write a java program to create a package myMathPack, which contains a class ComplexNumber with the methods to add two complex numbers. Show the usage of myMathPack package in a main program. (12)

B) Define following: (8)
i) abstract class
ii) short circuit operator

6) What is an exception? Define different types of exceptions. (8)

A)

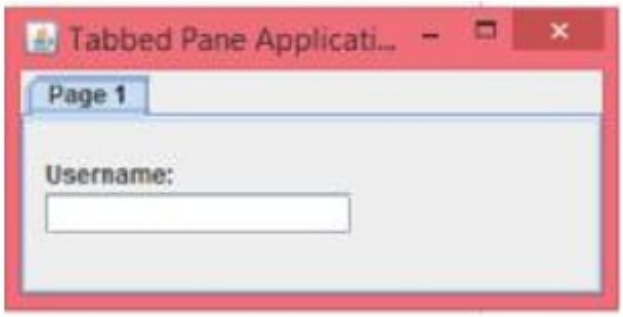
B) Design a stack class. Provide your own stack exceptions namely push exception and pop exception, which throw exceptions when the stack is full and when the stack is empty respectively. Show the usage of these exceptions in handling a stack object in the main. (12)

7) A) What is inter thread communication? Demonstrate inter thread communication with the help of Producer-Consumer problem. (12)

B) Define following: (8)
i) static import
ii) super

8) A) Write a java program to copy one file to other using stream classes of java.io package (8)

B) Write a program to develop the following design using swings as in the following figure: (12)



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