Question Paper

MANIPAL ACADEMY OF HIGHER EDUCATION

INTERNATIONAL CENTER FOR APPLIED SCIENCES
IV SEMESTER B.Sc. (Applied Sciences) in ENGG. - END SEMESTER THEORY EXAMINATION - APRIL/MAY 2019
JAVA PROGRAMMING [ICS 121 - S2]

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

Answer 5 out of 8 questions.

Missing data, if any, may be suitably assumed

1)

A) Write short notes on: Multithreading, Abstraction and Literals. (12)

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 find sum of all elements of 2D array with the help of for-each. (8)

2)

A) What is the difference between scope and lifetime of a variable? Explain with proper example code. (10)

B) What is the difference between unsinged right shift and signed right shift operator? Explain with suitable example code and output of the code. (10)

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 run time polymorphism? Explain with sample code. (5)

4)

A) How variable length argument method is different from a method? Write a complete Java program to demonstrate overloading of variable length argument method. (12)

B) Write short notes on finally block and static block. (8)

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 (12)

program where main( ) is not in the same package.

B) What are the different ways to declare 1D array in Java. (8)

6) What is the difference between checked and unchecked exception? Support (8)
A) your answer with the help of Java example code.

B) Design a stack class. Provide your own stack exceptions namely push (12)
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.

7) Write a complete Java thread program to find sum of matrix elements. (12)
A) Create a class MatrixThread which either implements Runnable interface or
extends Thread class. MatrixThread class has rowsum and 1D array
reference as data members { you may also require String and other data
members as per your implementation logic }.Create three MatrixThreads in
main( ) and pass a row to each of them as parameter to constructor call of
MatrixThread object. MatrixThread object store sum of row in rowsum.
Once all MatrixThread objecs finish their execution, main( ) thread finds the
sum of rowsum and thus finds the sum of elements of matrix.

B) Write a complete Java program to copy one text file to other text file . (8)

8) What is LayoutManager? Support your answer with the help of any one of (5)
A) the LayoutManager, applied in your example code.

B) Design a swing application which accepts three marks (each out of hundred (15)
)from the user and display the grade dependent on calculated average
marks . Follow ICAS grading system.

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