

Question Paper

Exam Date & Time: 30-Nov-2019 (09:30 AM - 12:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

INTERNATIONAL CENTRE FOR APPLIED SCIENCES END SEMESTER THEORY EXAMINATION NOVEMBER/DECEMBER 2019 II SEMESTER B.Sc.(Applied sciences) in engg. Java Programming [ICS 121]

Marks: 100

Duration: 180 mins.

Answer 5 out of 8 questions.

- 1) What is byte code? How it is useful to make java platform independent? (8)
 - A)
 - B) "Java Is a Strongly Typed Language", answer in support of the statement. (8)
 - C) Define literals in Java. (4)
- 2) Differentiate between scope and life time of a variable. Support your answer (12) with the help of an example program.
 - A)
 - B) What is instance hiding problem? How will you overcome the problem? (8) Explain with the help of an example code.
- 3) Define a class to represent a complex number called **Complex**. Use (12) parameterized constructor to initialize the objects. Provide the following member functions:-
 - A) To display a complex number in a+ib format.
To add 2 complex numbers. (the return value should be complex)
Write a main function to test the class.
 - B) What do you mean by variable length argument method? Write complete (8) java program which includes variable length argument method to find largest among three integer elements. Overload the method for float data. Demonstrate the functionality of the method through main() .
- 4) Create an abstract class Figure with abstract method area and two integer (12) dimensions. Extend this class to inherit three more classes Rectangle, Triangle and Square which implements the area method. Show how the area can be computed dynamically during run time for Rectangle, Square and Triangle.
 - A)
 - B) Write short note on (8)
 - i) Super
 - ii) final
- 5) Develop following methods- (12)

- A) (i) max (which finds the maximum in an array and returns it)
(ii) max (which finds the maximum in a matrix and returns the result)
Place this in a package called p1. Let this package be present in a folder called "myPackages". Write a main method to use the methods of package p1.
- B) What is the difference between checked and unchecked exception? Support (8)
your answer with the help of Java example code.
- 6) Design an interface called Stack with 2 methods namely push() and pop() in (20)
it. Design a class called FixedStack, which implements a fixed length
version of the stack. Also design a class called DynamicStack, which
implements a growable version of the stack. Write a main method, which
uses both these classes through an interface reference.
- 7) Define thread. What are the stages of a thread during its life time? (8)
- A)
- B) Write and execute a java program to create two different thread classes by (12)
extending Thread class, the first thread prints multiplication table for 5 in the
form $1 * 5 = 5$ (first 10 terms in different lines) and the second thread prints
multiplication table for 7. Create a class called Tables which will instantiate
the two different thread classes.
- 8) Write a complete Java program to copy one text file to other text file . (8)
- A)
- B) Design a swing application which accepts three sessional marks (each out (12)
of 20)from the user and display the Total of best two marks . Follow ICAS
system.

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