U.S.N

P.E.S. College of Engineering, Mandya - 571 401
(An Autonomous Institution affiliated to VTU, Belagavi)
First Semester, Master of Computer Applications (MCA)
Semester End Examination; April / July - 2021
Object Oriented Programming with Java

Time: 3 hrs   *Max. Marks: 100*

Course Outcomes

The Students will be able to:

CO1: Understand the basic programming constructs of java Apply suitable OOP concepts to develop java programs for a given scenario.

CO2: Illustrate the concepts of generalization and runtime polymorphism application.

CO3: Exemplify the usage of Packages, Interfaces, Exceptions and Multithreading.

CO4: Illustrate exception handling concepts and multithreading using different problem statements.

CO5: Demonstrate Enumerations, wrappers, Auto boxing. Implement the concepts of networking using java network classes.

<u>*Note:*</u> *I) Answer any **FIVE** full questions, selecting **ONE** full question from each unit.*

*II) Any **THREE** units will have internal choice and remaining **TWO** unit questions are compulsory.*

III) Each unit carries 20 marks.

Q. No.	Questions	Marks	BLs	COs	POs
	UNIT - I				
1 a.	Explain basic pillars of object oriented programming with appropriate examples.	10	L2	CO1	PO1
b.	Explain the following with Java program illustration: i) Break with Label ii) Continue with Label	10	L3	CO1	PO2
	OR				
1 d.	Assess and explain how constructors are different from class methods? Write an example Java program to implement the same.	10	L2	CO1	PO1
e.	Write a Java program to search for a given key of the type integer in an integer list of items using *for each* statement. Apply linear search algorithm.	10	L2	CO1	PO1
	UNIT - II				
2 a.	List out the constraints on use of Java keyword '*static*'. Demonstrate with a Java program for the creation of static block, static data member(s) and static member method(s).	10	L2	CO2	PO1
b.	Create an outer class called Book with data members: Bk-id(integer), Bk-name(string) and inner class Author with data members: firstName(string), lastName (string). Write member methods to read and display book information. Create a BookDemo class to demonstrate read and display '*n*' books with proper output.	10	L2	CO2	PO2

UNIT - III

3 a. List out the application of the Java keyword '*super*'. Demonstrate with a Java program, how we can pass parameters to super class constructor? | 10 | L2 | CO3 | PO2

   b. Explain method overriding in Java. Illustrate with an example Java program, how the same can be stopped in an inherited hierarchy? | 10 | L3 | CO3 | PO2

OR

3 d. With an example program, compare and contrast between interface and abstract class. | 10 | L3 | CO3 | PO1

   e. Justify the statement "one interface multiple methods" with a sample Java program. | 10 | L3 | CO3 | PO2

UNIT - IV

4 a. Write a Java program to demonstrate the use of nested try, catch blocks with finally. | 10 | L3 | CO4 | PO2

   b. Differentiate between the checked and unchecked exceptions. Write and explain any five built-in exceptions for both the types. | 10 | L2 | CO4 | PO1

OR

4 d. Explain synchronization of threads in Java. With an example Java program, demonstrate the use of synchronized statement. | 10 | L2 | CO4 | PO2

   e. Compare and contrast between the Java keywords '*throw*' and '*throws*' with a sample Java program. | 10 | L3 | CO4 | PO1

UNIT - V

5 a. Explain Enumeration in Java. Design and develop a Java program, demonstrate the use of values() and valueOf() methods of Enumeration. | 10 | L3 | CO5 | PO2

   b. Explain URL connection class with all the methods that support it. | 10 | L3 | CO5 | PO1

∗ ∗ ∗