PES University, Bengaluru
(Established under Karnataka Act 16 of 2013)

UC15MC553

MAY 2017: END SEMESTER ASSESSMENT (ESA) MCA. IV SEMESTER
UC15MC553 - OOP Using Java

Time: 3 Hrs		Answer All Questions	Max Marks: 100
1.	a)	Define the functionalities of JRE, JVM and JDK.	2+2+1
	b)	Describe type-casting and its types in detail.	5
	c)	Explain the different control statements and their types used in Java.	10
2.	a)	Define following: a) Class (b) Constructor (c) Polymorphism (d) Static Block (e) Command line arguments	5
	b)	Discuss the usage of Variable arguments to a method with an example.	5
	c)	Write a program to define a class "Matrix" with methods "readMatrix()", "addMatrix()" and "printMatrix()". The program should find the sum of two matrices. An error message should be displayed if the order is incompatible.	10
3	a)	How do you differentiate between an abstract class, normal class and an interface with respect to syntax, usage and purpose?	5
	b)	Define synchronized threads.	2
	c)	Write a short note on Inter-communication of threads.	3
	d)	Write a program to demonstrate Car Race. Each car object has its own properties like name, color etc. All the cars have to complete 5 laps. Every car has the same amount of delay after each lap. Display the status of each racer after completion of each lap. (Use multi-threading).	10
4.	a)	Explain each of the given below: a) Inheritance and its types (b) Overloading and Overriding c) Errors and Exceptions (d) try, catch and finally (e) throw and throws	10
	b)	Define five built-in exceptions with example for each.	5
	c)	Design a program to create an interface "Shape" with a method "area()". Define the classes "Triangle", "Rectangle" and "Circle" which implements the "Shape" interface. Complete the program by constructing objects for each class (using constructors) and calculate its area.	5
5.	a)	Give the definition and example for five String methods in Java.	5
	b)	Write notes on: (a) Wrapper Class (b) Enumerations (c) Annotations	9
	c)	Write a program to define an object with the default location of the system. Display the object's Country name (in full) and Language (in full). Create another object and set its location to "Punjabi" (language) and "India" (country). Also display the Date and currency of the location object.	6