



**B.E DEGREE EXAMINATIONS: NOV/DEC 2022**

(Regulation 2018)

Third Semester

**INFORMATION SCIENCE AND ENGINEERING**

**U18ISI3203: Object Oriented Programming**

**COURSE OUTCOMES**

- CO1:** Analyze a problem and identify classes, objects, and the relationships among them  
**CO2:** Develop applications using various types of Inheritance and Interfaces  
**CO3:** Develop applications or programs using exception handling and multithreading  
**CO4:** Analyze an application and make use of object-oriented concepts for its implementation.  
**CO5:** Develop programs using collections, files and streams in java.

**Time: Three Hours**

**Maximum Marks: 100**

**Answer all the Questions:-**

**PART A (10 x 2 = 20 Marks)**

**(Answer not more than 40 words)**

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|--|-----|-------------------|
| 1. List the use of Garbage Collection.                                   | CO1 | [K <sub>1</sub> ] |
| 2. Differentiate between JVM and JRE.                                    | CO1 | [K <sub>2</sub> ] |
| 3. Outline the advantage of java package.                                | CO2 | [K <sub>2</sub> ] |
| 4. Recall about the Java finally block.                                  | CO2 | [K <sub>1</sub> ] |
| 5. Specify the different ways of creating the thread.                    | CO3 | [K <sub>2</sub> ] |
| 6. Define Polymorphism.  | CO3 | [K <sub>1</sub> ] |
| 7. Draw the hierarchy of collection framework                            | CO4 | [K <sub>1</sub> ] |
| 8. Construct a java program to check the given year is leap year or not? | CO4 | [K <sub>3</sub> ] |
| 9. List the classes available in Byte Streams for I/O operations.        | CO5 | [K <sub>2</sub> ] |
| 10. Recall about File Reader.  | CO5 | [K <sub>1</sub> ] |

**Answer any FIVE Questions:-**

**PART B (5 x 16 = 80 Marks)**

**(Answer not more than 400 words)**

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|---|---|-----|-------------------|
| 11. a) Describe in detail about object-oriented programming Paradigm.                     | 8 | CO1 | [K <sub>2</sub> ] |
| b) Define the term constructors. Illustrate about parameterized constructor with example. | 8 | CO1 | [K <sub>2</sub> ] |

12.	Classify the different of types of inheritance. Explain the types of Inheritance with examples.	16	CO2	[K <sub>2</sub> ]
13. a)	Demonstrate about Method Overloading with example program.	8	CO3	[K <sub>3</sub> ]
b)	A boy has his money deposited \$1000, \$1500 and \$2000 in banks-Bank A, Bank B and Bank C respectively. We have to print the money deposited by him in a particular bank. Create a class 'Bank' with a method 'getBalance' which returns 0. Make its three subclasses named 'BankA', 'BankB' and 'BankC' with a method with the same name 'getBalance' which returns the amount deposited in that particular bank. Call the method 'getBalance' by the object of each of the three banks.	8	CO3	[K <sub>3</sub> ]
14. a)	Define an interface “IntOperations” with methods to check whether an integer is positive, negative, even, odd, prime and operations like factorial and sum of digits. Define a class MyNumber having one private int data member. Write a default constructor to initialize it to 0 and another constructor to initialize it to a value (Use this). Implement the above interface. Create an object in main and perform the above operations using a menu.	8	CO4	[K <sub>3</sub> ]
b)	Discuss about the various operations that can be performed on Array List with suitable examples.	8	CO4	[K <sub>2</sub> ]
15. a)	Construct InputStreamReader and OutputStreamWriter with examples.	8	CO5	[K <sub>2</sub> ]
b)	Illustrate about Serialization and deserialization with examples.	8	CO5	[K <sub>2</sub> ]
16. a)	Define Exception handling. What are the different types of exceptions? and give an example to explain the various keywords used in Exception handling.	8	CO2	[K <sub>2</sub> ]
b)	What is a thread? Illustrate the life cycle of a thread. Explain the thread with examples.	8	CO3	[K <sub>2</sub> ]

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