



B.TECH DEGREE EXAMINATIONS: NOV/DEC 2023

(Regulation 2018)

Third Semester

INFORMATION TECHNOLOGY

U18ITI3203: Object Oriented Programming

COURSE OUTCOMES

- CO1:** Interpret the need of various OOPS concept.
CO2: Apply the OOPS concepts for developing application.
CO3: Apply the concepts of packages and interfaces to write simple applications.
CO4: Explore the importance of strings and stream classes.
CO5: Summarize the importance of exception handling and threads.
CO6: Apply the concepts of collections for handling data.

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. What is garbage collection in Java? | CO1 [K ₂] |
| 2. List the properties of a constructor. | CO2 [K ₂] |
| 3. Differentiate method overloading and method overriding. | CO2 [K ₂] |
| 4. Discuss the use of final keyword in Java. | CO3 [K ₂] |
| 5. Find the output:
<pre>class Demo{ public static void main (String args[]){ int i1=6; int i2=7; String s1= "8"; System.out.println(i1+i2+s1); } }</pre> | CO4 [K ₃] |
| 6. Summarize the use of autoboxing and unboxing in Java. | CO4 [K ₂] |
| 7. What are checked and unchecked exceptions? | CO5 [K ₂] |
| 8. Give the life cycle of a Thread. | CO5 [K ₂] |
| 9. Compare ArrayList and linkedlist classes. | CO6 [K ₂] |
| 10. Summarize the importance of Collection classes in Java. | CO6 [K ₂] |

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

11. a) List the features of Java. Explain. 8 CO1 [K₂]
b) A cloth showroom has announced the seasonal discounts on purchase of handloom items. 8 CO2 [K₃]

<u>Amount</u>	<u>Discount</u>
0 – 100	5%
101 – 200	7.5%
201 – 300	10%
Above 300	15%

Given the amount purchased by the customer, write a Java program to calculate the net amount to be paid by a customer and display the amount.

12. What is inheritance? Discuss the types of inheritance in Java. 16 CO2 [K₂]
13. a) Discuss the various access specifiers in Java with suitable example. 8 CO3 [K₂]
b) Write a Java program to count the occurrence of vowels in a string. 8 CO4 [K₃]
14. a) Describe the Exception Handling mechanism in Java with suitable illustration 8 CO5 [K₂]
b) Write a Java program to handle exceptions for a banking system. Get the details like account no, name of customer, account type, amount. If the balance goes below a threshold limit, raise a WithdrawalNotPossible exception. [Hint: account no should have 10 digits, name should have only alphabets, account type should be savings or current, amount to be non-negative. If any discrepancy occurs, raise an InvalidCredentials exception] 8 CO5 [K₃]
15. What is interthread communication? Explain with the producer consumer problem. 16 CO5 [K₂]
16. a) Write a Java program to count the total number of lines, words, and characters in a file. 8 CO4 [K₃]
b) Explain the basic Vector operations in Java. 8 CO6 [K₂]
