Printed Pages: Mid Semester Test-1 UID No: 23BCBJC10084
Academic year 2024 – 2025

Program Name/Code: BE-CSE (CS-BS)
Subject Code: 23CSH-234
Semester: 3RD
Subject Title: OBJECT ORIENTED PROGRAMMING
Time: 1 Hour Maximum Marks: 20
Instructions: Attempt all questions

Q. No	Statement	CO mapping
	Section A 5 x 2 = 10 marks	
1	Describe the differences between int, float, and double data types in C.	CO1
2	Explain how the && operator works in a C conditional statement.	CO2
3	Illustrate How do you declare an array in C?	CO1
4	Explain how the scope of a variable declared within a function affects its accessibility in C.	CO1
5	Demonstrate How does function overloading enhance flexibility in C++?	CO1
	Section B 2 x 5 = 10 marks	
6	Describe the typecasting operator in C++ and how it enhances type safety compared to C-style casting	CO2
7	Describe how local variable declaration within a function scope differs between C and C++.	CO2

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Academic year 2024 – 2025

Program Name/Code: Bachelor of Engineering (Computer Science and Engineering) (Computer Science and Business Systems) (In association with TCS)

Subject Code: 23CSH-239

Semester:3

Subject Title : SOFTWARE ENGINEERING

Time: 1 Hour **Maximum Marks: 20**

Instructions: Attempt all questions

Q. No	Statement	CO mapping
	Section A 5 x 2 = 10 marks	
1	Describe the main functions of software.	CO1
2	Describe the benefits of viewing software as a product rather than just a program	CO1
3	Describe the iterative process in the iterative waterfall model	CO1
4	Define agile software development.	CO1
5	Explain the difference between structural and behavioral modeling.	CO1
	Section B 2 x 5 = 10 marks	
6	Compare and contrast the spiral model with the traditional waterfall model.	CO2
7	Demonstrate the benefits of using agile methods in software development by comparing them with traditional methodologies	CO2

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Academic year 2024 – 2025

Program Name/Code: Bachelor of Engineering (Computer Science and Engineering) (Computer Science and Business Systems) (In association with TCS)
Subject Code: 23CSH-246
Semester:3
Subject Title : COMPUTATIONAL STATISTICS
Time: 1 Hour **Maximum Marks: 20 Instructions:**
Attempt all questions

Q. No	Statement	CO mapping
	Section A 5 x 2 = 10 marks	
1	Describe the relationship between Conditional Distribution and regression models	CO1
2	State the purpose of a Multiple Linear Regression Model	CO1
3	State the conditions under which a set of variables can be considered Multivariate Normally Distributed.	CO1
4	Define the formula for the residual sum of squares (RSS) in a multiple regression model	CO1
5	State the differences between Multivariate Analysis of Variance (MANOVA) and Multivariate Analysis of Covariance (MANCOVA).	CO1
	Section B 2 x 5 = 10 marks	
6	Analyze the implications of the eigenvalues and eigenvectors of the covariance matrix in understanding the spread and direction of the data in a Multivariate Normal Distribution. Provide an example to support your analysis.	CO1
7	Apply the steps to detect and handle multicollinearity in a multiple regression model: Given a dataset, calculate the Variance Inflation Factor (VIF) for each predictor variable and suggest appropriate remedial measures if multicollinearity is detected. Y X1 X2 X3 (2 1 3 2)3 2 2 3(5 3 1 4)4 4 5 1(6 5 4 5)	CO1

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Academic year 2024 – 2025

Program Name/Code: Bachelor of Engineering (Computer Science and Engineering) (Computer Science and Business Systems) (In association with TCS)

Subject Code: 23CST-238

Semester:3

Subject Title : COMPUTER ORGANIZATION AND ARCHITECHTURE

Time: 1 Hour **Maximum Marks: 20**

Instructions: Attempt all questions

Q. No	Statement	CO mapping
	Section A 5 x 2 = 10 marks	
1	Define Arithmetic and Logic Unit.	CO1
2	Define two examples of common instructions in the 8085 instruction set.	CO1
3	Define the immediate Addressing Mode in 8085	CO1
4	Summarize the operation of a D flip-flop.	CO1
5	State the difference between Signed number representation and Unsigned number representation.	CO1
	Section B 2 x 5 = 10 marks	
6	Describe the role of the control unit in managing the execution of instructions within the CPU.	CO2
7	Explain the role of the different functional units in the 8085 microprocessor architecture	CO2

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Academic year 2024 – 2025

Program Name/Code: Bachelor of Engineering (Computer Science and Engineering) (Computer Science and Business Systems) (In association with TCS)
Subject Code: 23CST-236
Semester:3
Subject Title : FORMAL LANGUAGE AND AUTOMATA THEORY

Time: 1 Hour **Maximum Marks: 20**
Instructions: Attempt all questions

Q. No	Statement	CO mapping
	Section A 5 x 2 = 10 marks	
1	Write the regular expression that generates the set of all strings that end with a 1. Alphabet is {0,1}.	CO1
2	Explain the relationship between regular expressions and regular languages	CO1
3	Explain the importance of the Chomsky hierarchy in theoretical computer science.	CO1
4	Describe the concept of transitions in a finite automaton.	CO1
5	Explain how Kleene's theorem facilitates the conversion between regular expressions and finite automata	CO1
	Section B 2 x 5 = 10 marks	
6	Explain briefly the concept of production and derivation in the context of formal languages.	CO2
7	Identify the DFA that accepts the set of strings that start with 0101.	CO2