

UID No: 23B0B10081

Academic Year 2024-2025

Branch :
BE(CSE -CSBS)

Subject Code : 23CSH-298

Subject Title : Database Management Systems

Semester : 4

Time : 1 Hour

Maximum Marks : 20

Instructions : Attempt all questions

Q. No	Statement	CO Mapping	BT Level
Section A 5x2=10 marks			
1	Define DBMS Architecture. What are the three levels in the Three-Level Architecture of DBMS?	CO1	1
2	List and explain the major components of a Database Management System.	CO1	1
3	Explain in detail the relational database model?	CO1	1
4	State the purpose of a Database Management System in brief	CO1	1
5	Describe the concept of a Relational Model. How does it represent data in tables (relations)?	CO1	1
Section B 2x5=10 marks			
6	Explain how is a DBMS different from a file system in terms of data storage and management?	CO1	3
7	Explain the concept of relational data integrity with examples	CO1	3

Academic Year 2024-2025

Branch :
BE(CSE -CSBS)

Subject Code : 23CSH-296

Subject Title : Operating Systems

Semester : 4

Time : 1 Hour

Maximum Marks : 20

Instructions : Attempt all questions

Q. No	Statement	CO Mapping	BT Level
Section A 5x2=10 marks			
1	Explain in detail any two types of operating systems.	CO1	1
2	Compare single-tasking and multi-tasking operating systems.	CO1	2
3	Explain in brief the term "process scheduling" in operating systems	CO2	2
4	List four characteristics of an operating system.	CO1	1
5	Explain the characteristics of a distributed operating system.	CO1	2
Section B 2x5=10 marks			
6	Compare preemptive and non-preemptive process scheduling algorithms. Explain their key differences with examples, and discuss a scenario where each type would be most suitable.	CO3	4
7	Analyze the advantages and disadvantages of different IPC mechanisms such as pipes, message queues, shared memory, and sockets, considering factors such as performance, complexity, and security.	CO3	4

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

Subject Code: 23CSH-288

Semester: 4

Subject Title: Operation Research

Time: 1 Hour

Maximum Marks: 20

Instructions: Attempt all questions

O. No	Statement	CO mapping	BT LEVEL
Section A $5 \times 2 = 10$ marks			
1	Define Operational Research and its significance in decision-making processes.	CO1	BT1
2	Explain the differences between iconic, analogue, and mathematical models in OR.	CO1	BT2
3	Enlist the steps of the Simplex algorithm.	CO1	BT1
4	Explain the concept of partitioned matrices and their applications.	CO2	BT1
5	Explain the North-West Corner Method to solve Transportation Problem.	CO2	BT2
Section B $2 \times 5 = 10$ marks			
6	Apply the stages of an OR project to design and solve a product mix problem where a manufacturer wants to maximize profit by producing two products. Each product has a contribution margin of \$30 and \$50, with constraints on labor hours (maximum: 80) and raw materials (maximum: 100).	CO1	BT3
7	Solve the dual problem for the following LPP: Maximize $Z = 7x_1 + 8x_2$ subject to: • $2x_1 + 3x_2 \leq 12$ • $x_1 + 2x_2 \leq 8$ • $x_1, x_2 \geq 0$	CO2	BT4

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

Subject Code: 23CSH-299

Semester:4

Subject Title: Software Design with UML

Time: 1 Hour

Maximum Marks: 20

Instructions: Attempt all questions

Q. No	Statement	CO mapping	BT LEVEL
Section A 5 x 2 = 10 marks			
1	Identify the primary distinction between the Waterfall Model and the Spiral Model.	CO1	BT1
2	Analyze how the Object Model enhances the representation of real-world systems in software.	CO2	BT2
3	Explain how inheritance supports reusability in software systems.	CO2	BT2
4	Differentiate between primary and secondary actors in use case diagrams.	CO1	BT1
5	Define an actor within the context of a use case.	CO1	BT1
Section B 2 x 5 = 10 marks			
6	Evaluate the completeness of a Use Case Diagram for an airline booking system.	CO4	BT3
7	Examine how multiple inheritance can lead to ambiguity in method resolution.	CO4	BT4

UID No: 23BCB10081

Academic Year 2024-2025

Branch :
BE(CSE -CSBS)

Subject Code : 23CST-282

Subject Title : Introduction to Innovation, IP Management & Entrepreneurship

Semester : 4

Time : 1 Hour

Maximum Marks : 20

Instructions : Attempt all questions

Q. No	Statement	CO Mapping	BT Level
Section A 5x2=10 marks			
1	Explain the term 'disruptive innovation.' with context to organizations.	CO1	1
2	Discuss the impact of innovation on competitive advantage.	CO1	1
3	State the purpose of patenting an innovation?	CO1	1
4	Explain how an organization can create a culture of innovation.	CO2	1
5	Explain the role of technology in driving innovation to a certain level where everyday a new startup is opening and how it is changing modern lifestyle?	CO2	2
Section B 2x5=10 marks			
6	Explain the role of innovation in supply chain management that contribute to business success?	CO3	4
7	Analyze the different stages of the innovation process in an organization. Support your answer with a suitable example.	CO4	4