Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐   Total No. of Pages: 01

Total No. of Questions: 07

B.Sc (AIML), Semester-3rd
DATABASE MANAGEMENT SYSTEM
Subject Code: UGCA1922
M.Code: 90351
Date of Examination: 02-12-2025

Time: 3 Hrs.   Max. Marks:60

INSTRUCTIONS TO CANDIDATES:
1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B consists of SIX questions, carrying TEN marks each and student have to attempt any FOUR questions.**

Q. No.	Question	Course Outcome	Bloom's Level
	SECTION-A		
1.	Answer briefly:		
a.	List two disadvantages of hierarchical model.	CO1	L1
b.	Explain the importance of ER model.	CO1	L2
c.	Label SQL syntax for creating an index.	CO2	L1
d.	Compare DELETE and TRUNCATE.	CO2	L2
e.	What is a trigger? Give example.	CO1	L1
f.	Explain functional dependency with an example.	CO3	L2
g.	Define 1NF with an example.	CO3	L1
h.	Compare deadlock prevention and detection.	CO4	L2
i.	What is database integrity?	CO4	L1
j.	Compare 3NF and BCNF.	CO3	L2
	SECTION-B		
2.	Simplify SQL queries to perform DDL operations for creating a "Student" table.	CO1	L3
3.	Explain the advantages of stored procedures over ad-hoc queries with examples	CO2	L5
4.	Organize the process of converting a relation into BCNF and identify the term redundancy removal through normalization.	CO3	L3
5.	Examine concurrency issues in multi-user environments. Analyze how deadlock is handled in DBMS	CO4	L4
6.	Explain partial dependency. Differentiate between partial, transitive, and trivial dependencies.	CO3	L4
7.	Explain three level architecture of distributed databases with diagram.	CO4	L5

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B.Sc (AIML), Semester-3rd

Internet Tools and Applications

Subject Code: UGCA1959

M.Code: 90355

Date of Examination: 05-12-2025

Time: 3 Hrs.   Max. Marks:60

INSTRUCTIONS TO CANDIDATES:

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**

2. **SECTION-B consists of SIX questions, carrying TEN marks each and student have to attempt any FOUR questions.**

Q. No.	Question	Course Outcome	Bloom's Level
	SECTION-A		
1.	Answer briefly:		
a.	What does "WWW" stand for?	CO-1	L1
b.	Explain one disadvantage of chat groups.	CO-1	L2
c.	What is the difference between HTTP and FTP in one line?	CO-2	L1
d.	Outline the need of Internet protocols like TCP and IP?	CO-2	L2
e.	What is the format of an email address?	CO-3	L1
f.	Summarize why is the user agent important in the email architecture?	CO-3	L2
g.	Name any 2 servers help in working of DNS.	CO-4	L1
h.	Illustrate the advantage of using DNS over remembering IP addresses.	CO-4	L2
i.	List any two image formats commonly used in web pages.	CO-5	L1
j.	Explain the structure of a basic hyperlink in HTML.	CO-5	L2
	SECTION-B		
2.	Identify how an organization can apply Internet facilities such as newsgroups and chat groups for internal communication and collaboration.	CO-1	L3
3.	Compare and analyze how TCP and IP together ensure reliable communication on the Internet.	CO-2	L4
4.	Evaluate the advantages and disadvantages of using Internet applications in daily life.	CO-3	L5
5.	Explain the use of fragment URLs and image maps together can enhance web navigation and user experience.	CO-4	L5
6.	Apply your knowledge of Absolute and Relative URLs to create a link from one web page to another.	CO-5	L3
7.	Analyze how table alignment and cell spacing attributes influence the layout and presentation of data.	CO-5	L4

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B.Sc.(AIMLS), Semester- 3RD

DESIGN AND ANALYSIS OF ALGORITHMS

Subject Code: UGCA 1979

M.Code: 90350

Date of Examination: 29-11-2025

Time: 3 Hrs.   Max. Marks:60

INSTRUCTIONS TO CANDIDATES:

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.

2. SECTION-B consists of SIX questions, carrying TEN marks each and student have to attempt any FOUR questions.

Q. No.	Question	Course Outcome	Bloom's Level
	SECTION-A		
1.	Answer briefly:		
a.	Why Big-O notation is considered more ?	CO1	L1
b.	Explain the impact of input size on algorithm scalability.	CO1	L2
c.	Define the Bin Packing problem.	CO2	L1
d.	Explain the concept of N-Queens problem.	CO2	L2
e.	Define a network flow problem.	CO3	L1
f.	Compare prims and kruskal Algorithms.	CO3	L2
g.	What is Breadth First Search (BFS)?	CO3	L1
h.	Explain the difference between tractable and intractable problems.	CO4	L2
i.	State the Cook–Levin theorem.	CO4	L1
j.	Explain travelling salesman problem.	CO2	L2
	SECTION-B		
2.	Apply the substitution method to T(n) = T(n/2) + T(n/4) + n and find its asymptotic complexity.	CO1	L3
3.	Explain dynamic programming in detail. Which algorithms are used in dynamic programming?	CO2	L5
4.	Perform DFS traversal starting from vertex 1 for the graph with edges 1–2, 1–3, 2–4, 3–4. List the order of visited vertices.	CO3	L3
5.	Analyze the differences between P, NP, and NP-hard classes with examples.	CO4	L4
6.	Distinguish between bellman ford algorithm and Floyd warshall algorithm	CO3	L4
7.	Solve TSP, salesman must start from city A, visit cities B, C, D, and E exactly once, and return to A. The distances are: AB=10, AC=15, AD=20, AE=25, BC=35, BD=25, BE=30, CD=30, CE=20, DE=15. Find the route that minimizes the total travel distance.	CO2	L5

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Total No. of Questions: 07

B.Sc. (AIML), Semester- 3rd
ARTIFICIAL INTELLIGENCE
Subject Code: UGCA1973
M.Code: 90349
Date of Examination: 26-11-2025

Time: 3 Hrs.   Max. Marks:60

INSTRUCTIONS TO CANDIDATES:

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**

2. **SECTION-B consists of SIX questions, carrying TEN marks each and student have to attempt any FOUR questions.**

Q. No.	Question	Course Outcome	Bloom's Level
	SECTION-A		
1.	Answer briefly:		
a.	Discuss the importance of data and learning in AI.	CO1	L1
b.	Compare reactive agents with deliberative agents.	CO2	L2
c.	What is evolutionary search?	CO3	L1
d.	Mention any two application of neural search techniques.	CO3	L2
e.	What is the significance of constraint satisfaction problems?	CO4	L1
f.	Outline any two limitations of blind search.	CO4	L2
g.	What is an Ontology in AI?	CO5	L1
h.	Outline the advantages of using PROLOG for AI problem-solving.	CO6	L2
i.	What is Backward chaining in an expert system?	CO6	L1
j.	Demonstrate Utility theory.	CO5	L2
	SECTION-B		
2.	Identify the main goals of Artificial Intelligence. Explain how AI tries to achieve these goals.	CO1	L3
3.	Compare and contrast learning agents, goal-based agents and utility-driven agents.	CO2	L4
4.	Determine the application of AO* and A* algorithms in problem-solving.	CO3	L5
5.	Explain the concept of constraint propagation. Explain how constraints are propagated in problems such as Sudoku or Map-colouring.	CO4	L5
6.	Identify the term reasoning with defaults. Explain deductive and abductive type of reasoning.	CO5	L3
7.	Classify the applications of an expert system with its components and provide the names of some existing expert systems.	CO6	L4

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