Hall Ticket Number :

Max. Marks: 70   Time: 3 Hours
Answer *any five full questions* by choosing one question from each unit (5x14 = 70 Marks)
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Marks

UNIT–I

1. a) Prove that (P->Q)^(R->Q)<=>(PVR)->Q by using substitution method.   7M

   b) Explain automatic theorem proving with example.   7M

OR

2. a) Define statement and explain various connectives with example.   7M

   b) Define rules of inference. And Show that R$\rightarrow$S can be derived from the premises
      P $\rightarrow$(Q $\rightarrow$ S), ~R V P and R.   7M

UNIT–II

3. State relation and explain properties of binary relations with examples.   14M

OR

4. a) Explain types of functions with examples.   7M

   b) Draw the Hasse diagram for the positive divisors for 36.   7M

UNIT–III

5. a) Explain pigeonhole principle with example.   7M

   b) How many different license plates are there that involve 1, 2 or 3 letters followed by 4
      digits?   7M

OR

6. a) How many committees of 5 or more can be chosen from 9 people?   6M

   b) Explain Binomial and multinomial theorems.   8M

UNIT–IV

7. a) How to solve Recurrence and Non Recurrence Relations.   7M

   b) Find the generating function for the following sequence.
      i) $1^2, 2^2, 3^2, \ldots$
      ii) $1^3, 2^3, 3^3, \ldots$ 7M

OR

8. Find a generating function for the recurrence relation $a_{n+1} - a_n = 3^n$, n>=0, a_0=1. Find the
   general solution   14M

UNIT–V

9. a) Define Planner graph with examples.   5M

   b) What is Hamiltonian graph? Explain with an example.   9M

OR

10. a) What is spanning tree? Write and explain Breadth First Search algorithm with example. 9M

    b) What is Four-coloring problem? Explain with an example   5M

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Code: 19A532T

II B.Tech. I Semester Supplementary Examinations November 2023

Data Structures through Python

(Computer Science and Engineering)

Max. Marks: 70   Time: 3 Hours

Answer *any five full questions* by choosing one question from each unit (5x14 = 70 Marks)

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			Marks	CO	BL

UNIT–I

			Marks	CO	BL
1.	a)	Explain the following Special Methods with suitable examples. i.__init__() ii.__del__() iii.__lt__() iv.__repr__() v.__len__()	10M	CO1	2
	b)	How can you define and access private members in python? Explain with suitable program.	4M	CO1	2

OR

			Marks	CO	BL
2.	a)	Write a python program that stores a string and all its status details such as number of upper case characters, vowels, consonants spaces etc	8M	CO1	6
	b)	Discuss briefly about access control in python.	6M	CO1	2

UNIT–II

			Marks	CO	BL
3.	a)	How is raised exception propagated with in functions? Explain with suitable figure.	10M	CO2	2
	b)	How can you use else clause in exception handling.	4M	CO2	2

OR

			Marks	CO	BL
4.	a)	Define array and explain the Array Abstract Data Type in python?	7M	CO2	1,2
	b)	How can you separate ADT definition from its implementation? Explain.	7M	CO2	2

UNIT–III

			Marks	CO	BL
5.		Explain the following linked list operations with suitable diagrams. (i) Prepending (ii) Traversing (iii) Searching (iv) Removing	14M	CO3	2

OR

			Marks	CO	BL
6.	a)	What is SET ADT? Explain the Operations of SET ADT.	7M	CO3	1,2
	b)	Define Amortized Analysis. Evaluate the complexity of Python List?	7M	CO3	1,4

UNIT–IV

|			Marks	CO	BL
7.	a)	Write a Python Program to perform recursive implementation for computing X**n where n is an integer.	8M	CO4	6
	b)	Define Binary Search. Explain its properties.	6M	CO4	1,2

OR

			Marks	CO	BL
8.	a)	Describe the following i. Double Hashing ii. Quadratic probing iii. Rehashing	9M	CO4	2
	b)	Write Short notes on Hash Table.	5M	CO4	1

UNIT–V

			Marks	CO	BL
9.	a)	Apply Tree Traversal methods on the following Binary Tree.			
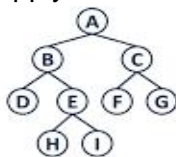
			Marks	CO	BL
			7M	CO5	3
	b)	Explain in detail about tree data structure?	7M	CO5	2

OR

			Marks	CO	BL
10.	a)	Construct an AVL tree with the following values: {60,25,35,100,17,80}	7M	CO5	6
	b)	Write short notes on Binary Search tree.	7M	CO5	1

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Code: 19AC34T

II B.Tech. I Semester Supplementary Examinations November 2023
Life Sciences for Engineers
(Common to CE, ME & CSE)

Max. Marks: 70   Time: 3 Hours

Answer *any five full questions* by choosing one question from each unit (5x14 = 70 Marks)
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			Marks	CO	BL

UNIT–I

			Marks	CO	BL
1.		Describe meant by classification? Write the importance of Classification?	14M	CO1	2
		OR			
2.	a)	Explain the five kingdom classification of living organisms?	7M	CO1	2
	b)	Describe is Endoplasmic reticulum? Write their structure and important functions and draw the labelled diagram?	7M	CO1	2

UNIT–II

		Marks	CO	BL
3.	Describe the mechanism of enzyme action?	14M	CO2	2
	OR			
4.	Define the antibodies and Write the types and functions of antibodies?	14M	CO2	1

UNIT–III

		Marks	CO	BL
5.	Explain the Glycolysis pathway and importance?	14M	CO3	2
	OR			
6.	Discuss the mechanism of photosynthesis in plants?	14M	CO3	4

UNIT–IV

		Marks	CO	BL
7.	Define the genetics? Explain the Mendel's Laws?	14M	CO4	1
	OR			
8.	Describe the meiosis cell division process?	14M	CO4	2

UNIT–V

			Marks	CO	BL
9.	a)	Write short notes on restriction enzymes?	7M	CO5	1
	b)	Explain the Microbes in Human Welfare?	7M	CO5	2
		OR			
10.		Explain the various process of recombinant DNA technology?	14M	CO5	2

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Code: 19A534T

II B.Tech. I Semester Supplementary Examinations November 2023
Web Programming
(Computer Science and Engineering)

Max. Marks: 70   Time: 3 Hours

Answer any five full questions by choosing one question from each unit (5x14 = 70 Marks)
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Marks

UNIT–I

1. a) What is URL and how URL is specified?   7M
   b) Write any Five Text Formatting elements in HTML.   7M

OR

2. a) Explain block-level elements in HTML with example   7M
   b) Explain the inline elements in HTML with example   7M

UNIT–II

3. a) What is audio tag? Write any five audio tag attributes.   7M
   b) What is Accessible Tables in html   7M

OR

4. a) Write any five image tag attributes.   7M
   b) How do I make my HTML control read only?   7M

UNIT–III

5. a) How External DTD works? Explain with example program   7M
   b) How to set Multiple Backgrounds using CSS   7M

OR

6.   Explain about different types of CSS with example programs   14M

UNIT–IV

7. a) What is JavaScript console? How do I fix JavaScript console error?   7M
   b) How to create an external JavaScript file? Explain.   7M

OR

8. a) Discuss about different types of data types supported by java script.   7M
   b) Write a java script code to handle onsubmit and onload events.   7M

UNIT–V

9. a) What is difference between JavaScript and jQuery?   7M
   b) Is jQuery front end or backend? Explain with example.   7M

OR

10. a) What is jQuery UI? Explain.   7M
    b) What is selector in jQuery? Explain with an example?   7M

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II B.Tech. I Semester Supplementary Examinations November 2023
Database Management Systems
(Computer Science and Engineering)

Max. Marks: 70   Time: 3 Hours
Answer *any five full questions* by choosing one question from each unit (5x14 = 70 Marks)
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Marks

UNIT–I

1. a) What are five main functions of a database management administrator? 7M
   b) What are the advantages of DBMS? Explain. 7M

OR

2. a) Write about instances and schemas. 4M
   b) Explain about types of database languages with syntax and example? 10M

UNIT–II

3. a) Explain the distinctions among the terms primary key, candidate key, and super key. 7M
   b) What is an E-R model? Explain with suitable examples, entity, entity sets, and attributes. 7M

OR

4. a) Draw ER diagram for the internet shop. 7M
   b) How can we translate an ER diagram into SQL statements to create tables? How are entities mapped into relations? How are relationships sets mapped? 7M

UNIT–III

5. a) Write about Views? 7M
   b) Briefly discuss about relation set operators? 7M

OR

6. a) With the help of example explain types of joins? 7M
   b) Briefly discuss about aggregate functions? Explain any 3 aggregate functions? 7M

UNIT–IV

7. a) Explain first normal form with example? 7M
   b) Define Decomposition and how does it address redundancy? Discuss the problems that may be caused by the use of decomposition? 7M

OR

8. a) Illustrate multivalued dependencies and Fourth Normal form with example? 9M
   b) List out the properties of Decomposition? 5M

UNIT–V

9. a) Discuss serializability in detail? 7M
   b) How data organized in a tree-based index, when would you use a tree-based index? 7M

OR

10. a) Explain in detail about ISAM? 7M
    b) Discuss how do you implement atomicity and durability? 7M

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II B.Tech. I Semester Supplementary Examinations November 2023
Digital Logic Design and Computer Organization
(Computer Science and Engineering)

Max. Marks: 70   Time: 3 Hours
Answer *any five full questions* by choosing one question from each unit (5x14 = 70 Marks)
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			Marks	CO	BL

UNIT–I

| 1. | a) | Explain How to subtract the given two binary numbers using 2's complement with an example? | 7M | CO1 | L2 |
| | b) | Give the differences between fixed-point representation and floating-point representation? | 7M | CO1 | L2 |

OR

| 2. | a) | Elaborate on the basic functional units of a computer system? | 7M | CO1 | L2 |
| | b) | Discuss about different types of computers? | 7M | CO1 | L2 |

UNIT–II

| 3. | a) | Implement a full adder circuit using NOR gates; implement a full adder using 8x1 multiplexers. Explain both the circuits and compare their efficiency? | 7M | CO2 | L2 |
| | b) | Prepare truth table and draw the circuit for the following circuit $X=A^|BC(A+D)^|$. | 7M | CO2 | L6 |

OR

| 4. | a) | Implement the following multi-output combinational logic circuit using a 4-to-16 line decoder? $F1 = (1,2,4,7,8,11,12,13)$. $F2 = (2,3,9,11)$. | 8M | CO2 | L6 |
| | b) | Simplify the Boolean function using three variable map $F(X, Y, Z) = \Sigma(0,1,5,7)$. | 6M | CO2 | L4 |

UNIT–III

| 5. | a) | Illustrate the significance of condition code flags in program execution? | 7M | CO3 | L4 |
| | b) | What is instruction set architecture? What are the controlling factors of ISA? | 7M | CO3 | L1 |

OR

| 6. | a) | Write an algorithm to add binary numbers represented in normalized floating-point mode with base 2 for exponent? | 10M | CO3 | L4 |
| | b) | Differentiate between big-endian and little-endian assignments? | 4M | CO3 | L2 |

UNIT–IV

| 7. | a) | Discuss the significance of transaction look aside buffer in virtual memory? | 7M | CO4 | L2 |
| | b) | Give the structure of semiconductor RAMs. Explain read and write operations? | 7M | CO4 | L3 |

OR

| 8. | a) | Why do we need cache memories? Explain how they will help with programs execution giving details about where they are used? | 7M | CO4 | L1, L2 |
| | b) | Explain how a program is executed in reality. Do make sure that your explanation details about PC, MAR, MBR, IR registers? | 7M | CO4 | L2 |

UNIT–V

| 9. | a) | Illustrate the operation of the small computer system interface bus? | 7M | CO5 | L3 |
| | b) | Explain the terms. (i) Vectored Interrupts (ii) Interrupt Masking | 7M | CO5 | L2 |

OR

| 10. | a) | Explain the types of commands an I/O device receives when addressed by the CPU? | 7M | CO5 | L2 |
| | b) | Examine how devices are addressed on the universal serial bus? | 7M | CO5 | L3 |

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