Name. ..... **Student Sys Id.:**	**Printed Pages:01**

SHARDA UNIVERSITY
Beyond Boundaries

School of Engineering and Technology
Department of Computer Science and Engineering

Mid Term Examination (MTE), Session: 2022-23 (FR)

B. Tech CSE Semester IV

Course Title: Introduction to Biology for Engineers Course Code: BTY223	Max Marks: 50 Time:1:00 hr

Instructions:	1. All questions are compulsory in Section A, B and C *Assume missing data suitably if any*
CO1	Elaborate the fundamentals of living things, their classification, cell structure and biochemical constituents.
CO2	Illustrate the concept of plant, animal and microbial systems and growth in real life situations.

Section A (2X5=10Marks)

1.	Draw a well labelled diagram of an eukaryotic cell.	CO1	5	K2
2.	What are carbohydrates and discuss about the different types of carbohydrates with examples.	CO2	5	K2

Section B (2X8=16Marks)

3.	What is the Cell Theory? Mention the scientists involved in developing the cell theory.	CO1	8	K3
4.	Explain the hierarchical arrangement of proteins	CO2	8	K3

Section C (2X12=24Marks)

5.	a) Differentiate between an eukaryotic and a prokaryotic cell. -----OR----- b) How will you define a living organism? What are the characteristics of a living organism?	CO1	12	K4
6.	a) Classify carbohydrates based on the number of saccharide units. Provide structures for the monosaccharides glucose and fructose. Also, write a brief note on the polysaccharide that is made by plants when they store glucose. -----OR----- b) Is it possible to exploit the structure of DNA to store information? Support your answer with logical reasoning and explanation.	CO2	12	K4

Sharda School of Engineering & Technology
Computer Science & Engineering

Mid Term Examination (MTE), Session:2022-23
[Programme:Bachelor of Technology (Computer Science & Engineering)] [Semester 4]

Course Title: Data Base Management System. Course Code: .....CSE249.....Paper Id: 16280.....	Max. Marks: 50 Time: 1:30 Hrs.

Instructions:	1. All questions are compulsory. *Assume missing data suitably if any*
CO1	Explain The Basics Concepts Of Data Base.
CO2	Demonstrate The Knowledge Of Databases To E-R Modelling.

SECTION A

				(4X4=16 Marks)
1.	List the differences between Database System and File System.	CO1	4	K1
2.	Explain data Independence? Compare physical and logical data independence.	CO1	4	K2
3.	Define the term Database Administrator with its responsibility.	CO2	4	K1
4.	Explain the following concepts in context of relational model. (i) Relation (ii) Attributes (iii) Tuple (iv) Cardinality	CO2	4	K2

SECTION B

				(2X7=14 Marks)
5.	Construct an ER diagram of Hospital Management System.	CO1	7	K3
6.	Apply the SQL Queries for the given schema: Student(Name, StudentNumber, Class, Major) Course(CourseName, CourseNumber, Credit Hours, Department) Section(SectionIdentifier, CourseNumber, Semester, Year, Instructor) Grade_report(StudentNumber, SectionIdentifier, Grade) Prerequisite(CourseNumber, PrerequisiteNumber) i) Change the class of student with name "Uday" to 2. ii) Delete the record for the student whose name is "GEETA" and whose student number is 17. iii) For each section taught by "Prof. Jain", retrieve the course number, semester, year and number of students who took the section. iv) Retrieve the names of all senior students majoring in "CS". v) Retrieve the names and major departments of all students who have a grade of A in all their courses.	CO2	7	K3

SECTION C

				(2X10=20 Marks)
7.	(a). Analyse the use of different symbols of ER diagram. Differentiate between single valued and multi valued attributes. **--- OR ---** (b). Categorise the Normalization in Design of Databases.	CO1	10	K4
8.	(a). Define union compatibility? Explain why INTERSECTION of two relations can not be performed if they are not union compatible? **--- OR ---** (b). Compare Specialization and Generalization with suitable example.	CO2	10	K4

Sharda School of Engineering & Technology
Computer Science & Engineering

Mid Term Examination (MTE), Session:2022-23
[Programme:Bachelor of Technology (Computer Science & Engineering)] [Semester 4]

Course Title: Advanced Java Programming. Max. Marks: 50
Course Code: .....CSE014.....Paper Id: 17282..... Time: 1 Hrs.

Instructions: 1. All questions are compulsory.
Assume missing data suitably if any

CO1 Design GUI Using AWT And Swing

CO2 Develop Software Applications Using Object-oriented Design Methodology

SECTION A

(2X5=10 Marks)

1.	Compare AWT and Swing in Java.	CO1	5	K2
2.	Explain jdbc api in java.	CO2	5	K2

SECTION B

(2X8=16 Marks)

3.	Identify how the Adapter class is used in Java to simplify interface design and how it can be implemented in a Java program	CO1	8	K3
4.	Develop a RequestDispatcher in Servlet. Explain it with an example	CO2	8	K3

Diffi re Java Applet and its lifecycle with one example.

SECTION C

(2X12=24 Marks)

5.	(a).	Discover a java program that creates a simple GUI that contains a button. When the user clicks the button, the program should display a message dialog that says "Hello, World!".	CO1	12	K4
		--- OR ---			
	(b).	examine event handling in java			
6.	(a).	Discover a program to connect Java Application with Oracle database	CO2	12	K4
		--- OR ---			
	(b).	analyse the student feedback and store his feedback in database			

Sharda School of Engineering & Technology
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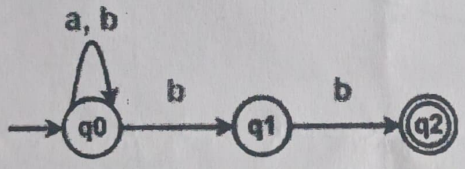
Mid Term Examination (MTE), Session:2022-23
[Programme: Bachelor of Technology (Computer Science & Engineering)] [Semester 4]

Course Title: THEORY OF COMPUTATION. Course Code: .....CSE251 Paper Id: 16281.....	Max. Marks: 50 Time: 1:30 Hrs.

Instructions:	1. All questions are compulsory. *Assume missing data suitably if any*
CO1	Formulate The Concept Of Automata And Related Terminology.
CO2	Design DFA And NDFA And Conversion From NDFA To DFA.

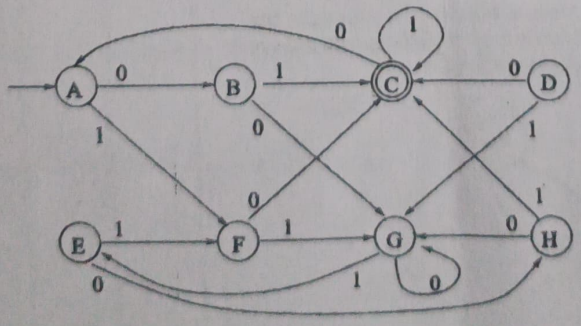
SECTION A

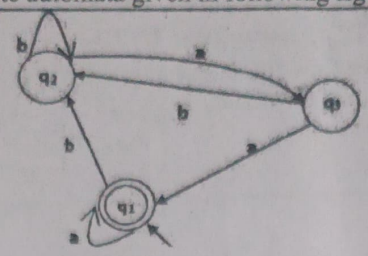
(4X4=16 Marks)

1.	Define a NFA for the language L which accepts all the string in which the third symbol from right end is always a over Σ = {a, b}.	CO1	4	K1
2.	Compare NFA & DFA. Convert the following NFA to equivalent DFA. 	CO1	4	K2
3.	List some applications of regular expressions. Give regular expressions for the following: ∑ ={a, b}Strings of a's and b's having strings without ending with ab.	CO2	4	K1
4.	Design a DFA that accepts a language L over input alphabets ∑ = {a, b} such that L is the set of all strings starting with 'aa' or 'bb'.	CO2	4	K2

SECTION B

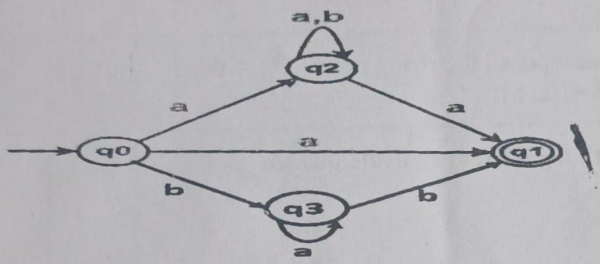
(2X7=14 Marks)

5.	Apply Myhill Nerode theorem to minimized the given finite automata. 	CO1	7	K3

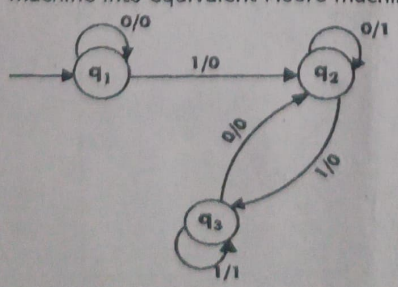
6.	Prove the Arden's Theorem, what are the conditions of Arden's Theorem to finite automata? Apply the Arden's Theorem to find the regular expression corresponding to the finite automata given in following figure: - 	CO2	7	K3

SECTION C

(2X10=20 Marks)

7.	(a). Simplify and convert the NFA into its equivalent DFA. Also mention the dead states if present in resultant DFA.  **--- OR ---** (b). Analyse the ε-NFA given below and convert this ε-NFA to a DFA using the subset construction algorithm.	CO1	10	K4

	ε	a	b	c
→p	Φ	{p}	{q}	{r}
q	{p}	{q}	{r}	Φ
*r	{q}	{r}	Φ	{p}

8.	(a). Analyse with suitable example that regular languages are closed under Kleen star, union, intersection, and concatenation operation. **--- OR ---** (b). Compare finite automata with **Mealy and Moore Machines**. Illustrate the stepwise conversion of **Mealy to Moore Machine and vice versa.** Convert the following Mealy machine into equivalent Moore machine. 	CO2	10	K4

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Computer Science & Engineering

Mid Term Examination (MTE), Session:2022-23
[Programme:Bachelor of Technology (Computer Science & Engineering)] [Semester 4]

Course Title: COMPUTER NETWORKS. Max. Marks: 50

Course Code: .....CSE252.....Paper Id: 16282..... Time: 1:30 Hrs.

Instructions: 1. All questions are compulsory.
Assume missing data suitably if any

CO1 Demonstrate And Differentiate Working Of All Layers Of The OSI Reference Model And TCP/IP Model.

CO2 Investigate And Explore Fundamental Issues Driving Network Design Including Error Control.

SECTION A

(4X4=16 Marks)

1.	Define OSI layers by function	CO1	4	K1
2.	Illustrate the five important components of Computer Networks	CO1	4	K2
3.	Define the concept of Piggy Backing	CO2	4	K1
4.	Explain Hamming code with the help of an example	CO2	4	K2

SECTION B

(2X7=14 Marks)

5.	Identify Networks based on topologies	CO1	7	K3
6.	Identify the characteristics of ISDN ? Illustrate various reference points and devices used in ISDN network?	CO2	7	K3

SECTION C

(2X10=20 Marks)

7.	(a). Analyse the responsiblities of the OSI model	CO1	10	K4
	--- OR ---			
	(b). Analyse Switch and Modem in details.			
8.	(a). Compare the various Error Detection Techniques	CO2	10	K4
	--- OR ---			
	(b). Classify the various Error Control Techniques			