

CO- Course Outcomes,

KL- Knowledge Level,

PO – Program Outcome

CO1 Upon completion of this course, students will be able to understand the different conventional and unconventional manufacturing methods employed for making different products.

CO2 Upon completion of this course, the students will have an overview of the mechanical behavior and application of tools used in machining purpose.

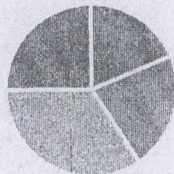
CO3 Upon completion of this course, the students will be able to examine the different Techniques involved in traditional machining process.

CO4 Students will be able to understand the manufacturing process of complex shape products.

CO5 Upon completion of this course, students will analyze the basic components of Lathe machine, Milling Machine, Drilling machine, Grinding Machine and different tools handled.

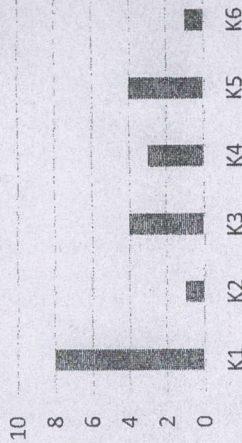
GRAFICAL REPRESENTATION

Bloom level wise distribution



■ CO1 ■ CO2 ■ CO3 ■ CO4 ■ CO5 ■ CO6

Course outcome wise distribution



ARKAJAIN
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END TERM EXAMINATION
School of Engineering & IT

Branch	Computer Science Engineering	Program	B.Tech
Subject Name	Graph Theory	Semester	5th
		Year	2022/ Odd

Time: 3 Hour
Max. Marks : 70

- Start writing from 2nd page onwards; don't Write on the 1st Page Backside
- Answer all Questions of Section A (Compulsory)
- Answer Any Four out of Six of Section B
- Answer Any Three out of Five of Section C
- Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will comes under Unfair Means and will Result in the Cancellation of the Papers.

Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5: Evaluating
	K2 : Understanding	K4 : Analysing	K6 : Creating

Section A (Each question Carry 02 Marks from Q1-i to Q1-x) - 20 Marks			
Q.N1	QUESTIONS	Marks	PO
i	List three situations where a graph could prove useful.	2	CO1 K1 PO:
ii	Define Path with respect to graph	2	CO1 K1 PO:
iii	State the necessary conditions to show that two graphs are isomorphic.	2	CO2 K2 PO:
iv	Prove that a complete graph with n vertices contains $n(n-1)/2$ edges.	2	CO3 K5 PO
v	Define Chromatic Number.	2	CO1 K1 PO
vi	Define Walk with respect to graph.	2	CO1 K1 PO
vii	When two edges and vertices are said to two be adjacent?	2	CO2 K4 PO
viii	What is chromatic polynomial?	2	CO1 K1 PC
ix	Define pendant vertex & Null Graph	2	CO1 K1 PC
x	What is loop & Parallel edge?	2	CO1 K1 PC

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question 5 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Show that the Hamiltonian path is a spanning tree	5	CO4	K4	PO5
3	Define rank & nullity of a graph with Example	5	CO1	K1	PO2
4	Prove that If graph has exactly two vertices of odd degree, there must be a path joining these two vertices.	5	CO3	K3	PO4
5	Verify Euler's theorem with an example.	5	CO4	K5	PO6
6	Prove that a tree with n vertices has n-1 edges.	5	CO3	K4	PO1
7	Prove $P_n(\lambda) = \lambda(\lambda-1)(\lambda-2)\dots(\lambda-n+1)$.	5	CO3	K5	PO4

Section C (Answer any THREE out of FIVE) – 30 Marks
(Each question Carry 10 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
8	Explain Kruskal's method with suitable example	10	CO2	K5	PO4
9	Explain Chromatic Partitioning in detail.	10	CO2	K3	PO2
10	Explain five color problem with theorem proof.	10	CO2	K3	PO3
11	Prove the graphs K_5 and $K_{3,3}$ are non planar	10	CO3	K3	PO1
12	Let graph G is 2 -chromatic, then prove that it is bipartite.	10	CO4	K6	PO5

Branch	Computer Science Engineering	Program	B.Tech
Subject Name	Humanities II: Soft Skills And Interpersonal Communication	Semester	5th
		Year	2022/Odd
Time: 3 Hour Max. Marks : 70	<ul style="list-style-type: none"> Start writing from 2nd page onwards; don't write on the 1st Page Backside Answer all Questions of Section A (Compulsory) Answer Any Four out of Six of Section B Answer Any Three out of Five of Section C Possession of <u>Mobile Phones</u> or any kind of <u>Written Material, Arguments with the Invigilator or Discussing with Co-Student</u> will comes under <u>Unfair Means</u> and will <u>Result in the Cancellation of the Papers.</u> 		
Knowledge Level (KL)	K1 : Remembering K2 : Understanding	K3 : Applying K4 : Analysing	K5 : Evaluating K6 : Creating

Section A (Each question Carry 02 Marks from Q1-i to Q1-x) - 20 Marks

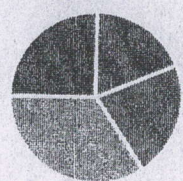
Q. N1	QUESTIONS	Marks	COs	KL	PO
i	What is Self-awareness?	2	CO5	K1	2
ii	What is Listening?	2	CO5	K1	2
iii	What is Verbal communication?	2	CO5	K1	2
iv	Write down the structure of future tense with one example.	2	CO4	K2	1
v	Define Intra personal & Interpersonal Communication	2	CO2	K2	2
vi	Define confidence.	2	CO4	K3	3
vii	What are the elements of team concept?	2	CO5	K3	3
viii	Write down the structure of present tense with one example.	2	CO4	K2	1
ix	What are the advantages of face-to-face Communication?	2	CO2	K2	2
x	What is Resume?	2	CO5	K3	3

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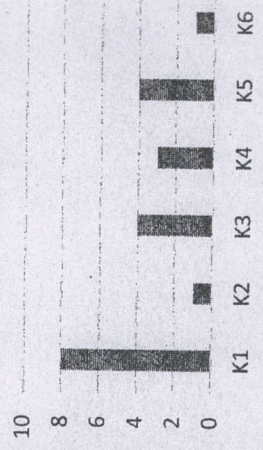
GRAFICAL REPRESENTATION

Bloom level wise distribution



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Course outcome wise distribution



Section B (Answer any FOUR out of SIX) - 20 Marks

(Each question 5 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	What is Verb? Give example	5	CO1	K6	1
3	What is the importance of listening in job?	5	CO3	K4	1
4	How to develop self-assessment in yourself?	5	CO3	K4	1
5	Write down five points on Interview mistakes, candidates should not do while sitting for an Interview.	5	CO5	K6	2
6	Do Oral Communication has any importance in business dealings, if Yes/NO than explain .(minimum-40 words)	5	CO1	K6	1
7	Write down few example of informal & formal oral communications.	5	CO5	K6	2

Section C (Answer any THREE out of FIVE) - 30 Marks-

(Each question Carry 10 Marks)

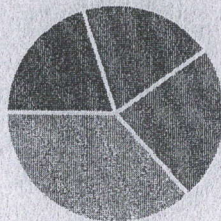
Q. No.	QUESTIONS	Marks	COs	KL	PO
8	Explain Group Discussion	10	CO3	K2	2
9	Explain basic functions of communication	10	CO4	K3	2
10	Explain the seven C's of communication	10	CO5	K2	2
11	What are the keys to effective listening?	10	CO2	K4	2
12	Write down the Complete Structure of Past Participle, Future, & Present Participle tense with a Suitable example of an each tense.	10	CO5	K2	2

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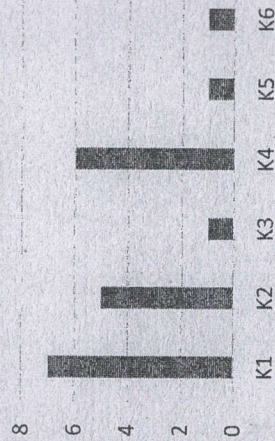
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Course outcome wise distribution



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School of Engineering & IT

Branch	Computer Science Engineering	Program	B.Tech
Subject Name	Object Oriented Programming	Semester	5th
		Year	2022/Odd
Time: 3 Hour Max. Marks : 70	<ul style="list-style-type: none"> Start writing from 2nd page onwards; don't Write on the 1st Page Backside Answer all Questions of Section A (Compulsory) Answer Any Four out of Six of Section B Answer Any Three out of Five of Section C Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will come under Unfair Means and will Result in the Cancellation of the Papers. 		
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Section A (Each question Carry 02 Marks from Q1-i to Q1-x) – 20 Marks

Q. N I	QUESTIONS	Mar ks	COs	KL	PO
i	Illustrate the use of ternary operator with an example.	2	CO1	K2	PO2
ii	Distinguish between break and continue.	2	CO1	K1	PO2
iii	What is the meaning of the term exceptions in java?	2	CO1	K2	PO2
iv	Why object is known as instance of a class?	2	CO2	K1	PO3
v	What do you mean by the term recursion?	2	CO1	K1	PO2
vi	How is array in java different from that in C?	2	CO2	K4	PO3
vii	What is a constructor and why do we need it?	2	CO3	K2	PO3
viii	Write a program to show the use of any two Character functions.	2	CO1	K3	PO2
ix	What is the difference between Array and ArrayList?	2	CO3	K1	PO2
x	How multiple inheritance is achieved in Java?	2	CO2	K4	PO3

Section B (Answer any FOUR out of SIX) - 20 Marks

(Each question 5 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Explain the life cycle of an Applet with neat diagram.	5	CO4	K2	PO5
3	Write a program to show the use of extends keyword.	5	CO3	K4	PO3
4	Differentiate between class and package.	5	CO3	K2	PO3
5	What are the different access specifiers available in java? Name any three non-primitive data types in java.	5	CO1	K1	PO2
6	What is a Wrapper class? Write a program to show the concept of AutoBoxing.	5	CO3	K4	PO3
7	What is OOP? Explain any 3 important features of OOP.	5	CO3	K1	PO3

Section C (Answer any THREE out of FIVE) - 30 Marks-

(Each question Carry 10 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
8	Write notes on: try, catch, throws, finally	10	CO3	K1	PO3
9	What are the demerits of using array? Write a program to show the use of parameterized constructor.	10	CO3	K6	PO3
10	What is the use of super keyword? Write a program to show method overriding.	10	CO2	K4	PO3
11	What are the benefits of using packages in java? Write a program to create multiple threads.	10	CO3	K4	PO3
12	Write a program to perform selection sort on an array of 6 elements.	10	CO2	K5	PO3

Branch	Computer Science Engineering	Program	B.Tech
Subject Name	Signals & Systems	Semester	5th
		Year	2022/Odd

- Start writing from 2nd page onwards; **don't write on the 1st Page Backside**
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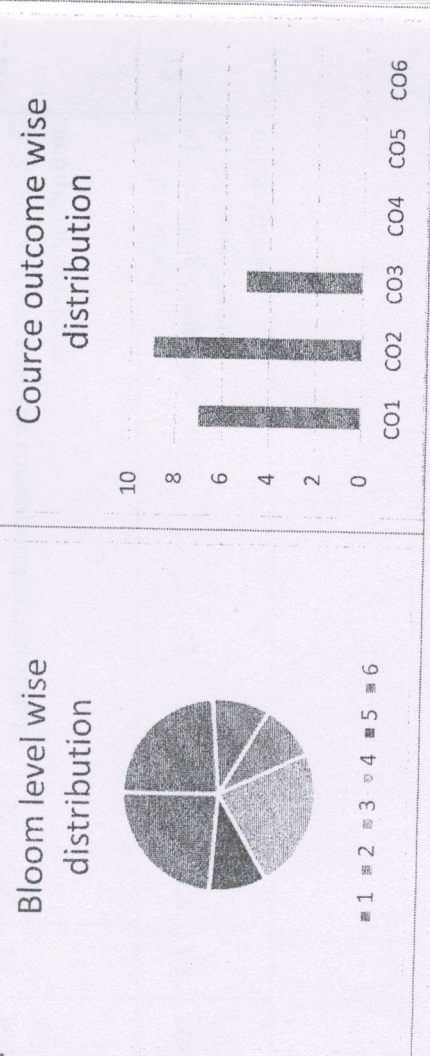
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GRAFICAL REPRESENTATION

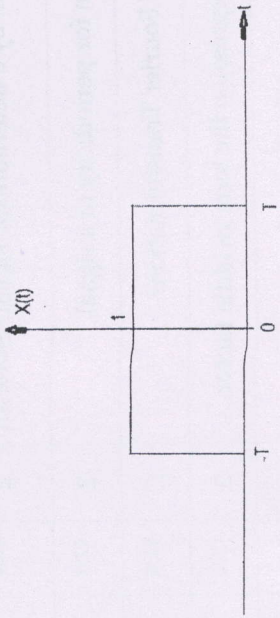


Section A (Each question Carry 02 Marks from Q1-i to Q1-x) - 20 Marks

Q. N1	QUESTIONS	Marks	COs	KL	PO
i	What do you mean by a deterministic signal? State an example	2	CO1	K1	PO1
ii	State the condition for periodicity of a signal.	2	CO1	K3	PO1
iii	What is the use of Fourier Transformation?	2	CO2	K4	PO2
iv	Explain with an expression the term twiddle factor.	2	CO2	K4	PO2
v	Explain the usefulness of the Z-transform.	2	CO2	K5	PO2
vi	What is scaling of a scaling?	2	CO2	K6	PO1
vii	What is a LTI system?	2	CO3	K1	PO1
viii	Explain linear and non-linear system.	2	CO1	K3	PO1
ix	What is Nyquist rate?	2	CO2	K6	PO1
x	Define the term aliasing.	2	CO2	K4	PO1

Section B (Answer any FOUR out of SIX) – 20 Marks

(Each question 5 Marks)

Q.No.	QUESTIONS	Mar ks	COs	KL	PO
2	Prove that the sine wave is a periodic signal.	5	CO1	K6	PO1
3	If $X_1(n) = \delta(n+1) + 2\delta(n) + \delta(n-1)$ $X_2(n) = 3\delta(n+1) + 5\delta(n) + 3\delta(n-1)$. Determine $X(n)$ by any method, where $X(n)$ is the convolution of $X_1(n)$ and $X_2(n)$.	5	CO3	K5	PO2
4	Determine the Z-transform of the following finite duration signals. a) $x(n) = \{3, 1, 2, 5, 7, 0, 1\}$ ↑ b) $x(n) = \{0, 0, 1, 2, 5, 4, 0, 1\}$	5	CO2	K4	PO2
5	Obtain the Fourier transform of a rectangular varying from $-T$ to T with amplitude of 1.	5	CO3	K6	PO2
					
6	Discuss the properties of the DFT.	5	CO3	K1	PO1
7	Define briefly: a) Causal and non-causal signal b) Periodic and non-periodic signal	5	CO1	K1	PO1

Section C (Answer any THREE out of FIVE) – 30 Marks-

(Each question Carry 10 Marks)

Q.No.	QUESTIONS	Mar ks	COs	KL	PO
8	Explain the following standard signals with mathematical expression and graphical representation: a) unit step signal b) Signum function c) Exponential signal d) Unit ramp signal	10	CO1	K1	PO1
9	Draw the waveforms represented by the following step functions: a) $f_1(t) = 2u(t-1)$ b) $f_2(t) = -2u(t-2)$ c) $f(t) = f_1(t) + f_2(t)$ d) $f(t) = f_1(t) - f_2(t)$	10	CO1	K2	PO1
10	Discuss the properties of Z Transform	10	CO2	K6	PO1
11	Find the DFT of the sample data sequence $x(n) = \{1, 1, 2, 2, 3, 3\}$ and compute the corresponding amplitude and phase spectrum.	10	CO3	K4	PO2
12	Explain briefly: a) Sampling Theorem b) Aliasing Effect c) Modulation	10	CO2	K2	PO1

Q.No.

QUESTIONS

Mar ks

COs

KL

PO

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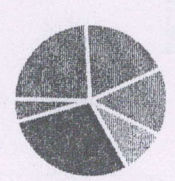
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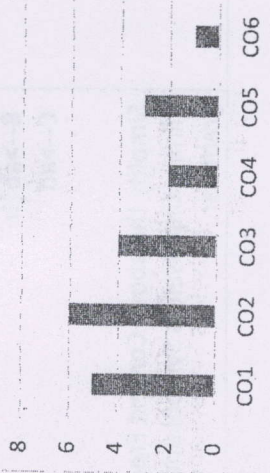
GRAFICAL REPRESENTATION

Bloom level wise distribution



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Course outcome wise distribution



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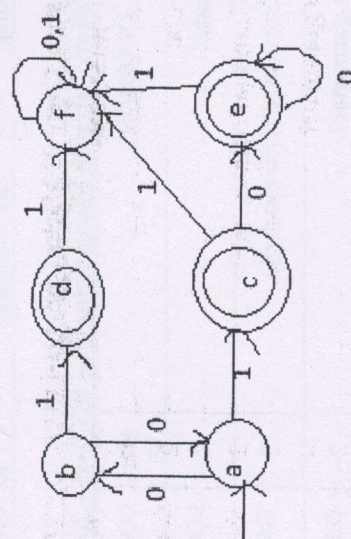
Branch	Computer Science Engineering	Program	B.Tech
Subject Name	Formal Language and Automata Theory	Semester	5th
		Year	2022/Odd
Time: 3 Hour	<ul style="list-style-type: none"> Start writing from 2nd page onwards; don't Write on the 1st Page Backside Answer all Questions of Section A (Compulsory) Answer Any Four out of Six of Section B Answer Any Three out of Five of Section C Possession of <u>Mobile Phones</u> or any kind of <u>Written Material, Arguments with the Invigilator or Discussing with Co-Student</u> will come under <u>Unfair Means</u> and will <u>Result in the Cancellation of the Papers.</u> 		
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Section A (Each question Carry 02 Marks from Q1-i to Q1-x) – 20 Marks

Q. N1	QUESTIONS	Mar ks	COs	KL	PO
i	Define Finite Automata.	2	CO1	K1	PO2
ii	Define Ambiguous Grammar with example.	2	Co2	K1	PO3
iii	What is Context free grammar?	2	Co3	K1	PO1
iv	Design the structure of Push Down automata.	2	Co5	K3	PO2
v	What is the necessity of Turnstile notation?	2	Co4	K4	PO2
vi	What are the Basic operation of Push Down Automata?	2	Co3	K2	PO3
vii	Give an example of power set.	2	Co1	K5	PO4
viii	Define Null production in Context free grammar.	2	Co3	K1	PO4
ix	What is the difference between L* and L+ .	2	Co1	K5	PO2
x	Define Turing Machine.	2	Co6	K1	PO6

Section B (Answer any FOUR out of SIX) - 20 Marks

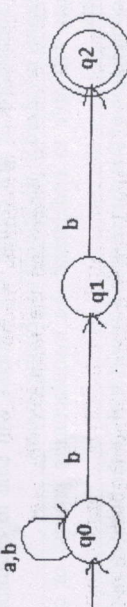
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Q. No.	QUESTIONS	Mar ks	COs	KL	PO
2	Design a Deterministic finite Automata over {0,1} which accepts string with no '11'.	5	Co1	K2	PO2
3	Write Chomsky Classification of grammar.	5	Co5	K3	PO5
4	Differentiate between left most and Right most Derivation.	5	Co3	K6	PO6
5	How greibach normal form differ from Chomsky normal form?	5	Co5	K4	PO4
6	Write Differences between Mealy Machine and Moore machine.	5	Co4	K2	PO2
7	 <p>Minimize the above Deterministic Finite Automata.</p>	5	Co1	K3	PO3

Section C (Answer any THREE out of FIVE) - 30 Marks-

(Each question Carry 10 Marks)

Q. No.	QUESTIONS	Mar ks	COs	KL	PO
8	Write the steps for Simplification of Context Free Grammar.	10	Co2	K2	PO2
9	Draw the transition diagram and table for the Deterministic Finite Automata over {0,1} which accepts all strings with substring '01'.	10	Co2	K5	PO5

10	$S \rightarrow ASA \mid aB$ $A \rightarrow B \mid S$ $B \rightarrow b \mid \epsilon$	10	Co2	K5	PO5
	Convert the following Context Free Grammar into Chomsky Normal Form.				
11		10	Co2	K5	PO1
	Convert the given Nondeterministic Finite Automata to its Deterministic form and finally draw the DFA.				
12	$T \rightarrow aaB \mid abA \mid aaT$ $A \rightarrow aA$ $B \rightarrow ab \mid b$ $C \rightarrow ad$	10	Co2	K5	PO2
	Simplify the above Context Free Grammar by eliminating Useless Symbol and write the reduced grammar.				



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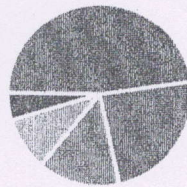
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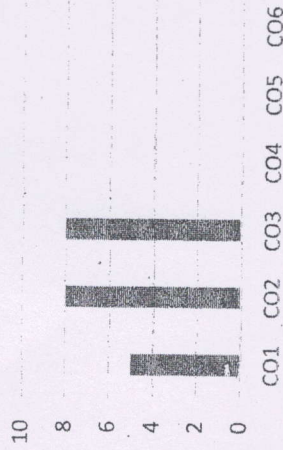
GRAFICAL REPRESENTATION

Bloom level wise distribution



■ 1 ■ 2 ■ 3 ■ 4 ■ 5 ■ 6

Course outcome wise distribution



Branch	Computer Science Engineering	Program	B.Tech
Subject Name	Database Management System	Semester	5th
		Year	2022/Odd
Time: 3 Hour Max. Marks : 70	<ul style="list-style-type: none"> Start writing from 2nd page onwards; don't Write on the 1st Page Backside Answer all Questions of Section A (Compulsory) Answer Any Four out of Six of Section B Answer Any Three out of Five of Section C Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will come under <u>Unfair Means</u> and will result in the <u>Cancellation of the Papers.</u> 		
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Section A (Each question Carry 02 Marks from Q1-i to Q1-x) - 20 Marks

Q. N1	QUESTIONS.	Mar ks	COs	KL	PO
i	List the advantages of DBMS?	2	CO3	K2	PO2
ii	Define (i) Entity (ii) Attribute	2	CO2	K1	PO4
iii	Discuss about Data- Manipulation language?	2	CO2	K1	PO2
iv	Discuss about Data Definition language?	2	CO1	K4	PO1
v	Define instance and schema?	2	CO1	K1	PO2
vi	Define the terms i) Entity type ii) Entity set	2	CO3	K2	PO2
vii	Discuss about the operators SELECT, PROJECT, UNION?	2	CO2	K1	PO4
viii	Define redundancy?	2	CO2	K1	PO2
ix	Discuss normalization?	2	CO1	K4	PO1
x	Illustrate functional dependency with example?	2	CO3	K2	PO2

Section B (Answer any FOUR out of SIX) - 20 Marks

(Each question 5 Marks)

Q.No.	QUESTIONS	Marks	COs	KL	PO
2	Define Null Values.	5	CO1	K1	PO1
3	List the set operations of SQL?	5	CO1	K5	PO2
4	Demonstrate transitive dependency? Give an example?	5	CO2	K1	PO2
5	Illustrate fully functional dependency with example?	5	CO3	K3	PO1
6	Explain about BCNF?	5	CO2	K2	PO2
7	Define Two Phase Commit protocol?	5	CO3	K1	PO2

Section C (Answer any THREE out of FIVE) - 30 Marks-

(Each question Carry 10 Marks)

Q.No.	QUESTIONS	Marks	COs	KL	PO
8	Discuss about different types of Data models?	10	CO3	K3	PO2
9	Discuss about the Concept Design with the ER Model?	10	CO3	K1	PO4
10	Explain about different types of integrity constraints?	10	CO2	K1	PO2
11	Explain different types of database users and write the functions of DBA?	10	CO3	K3	PO1
12	Define Join? Explain different types of joins?	10	CO2	K2	PO2