4E1301

4E1301
B. Tech. IV - Sem. (Main) Exam., - 2022
Artificial Intelligence & Data Science
4AID2 – 01 Discrete Mathematics Structure
CS, IT, AID, CAI

Time: 3 Hours   **Maximum Marks: 70**

Instructions to Candidates:

Attempt all ten questions from Part A. Five questions out of seven questions from Part B and three questions out of five from Part C.

Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL _____   2. NIL _____

PART – A

(Answer should be given up to 25 words only)   **[10×2=20]**

All questions are compulsory

Q.1 If A = {4, 1, 8}, then find the power set of A.

Q.2 For a relation R on a set A ={1, 2, 3, 4} given by R = {(1, 3), (1, 2), (2, 2), (3, 4)}, then find reflexive and transitive closure of R on the given set.

Q.3 What is the domain of the function $f(x) = x/(x^2 + 3x + 2)$?

Q.4 If $f(x) = e^x$ and $g(x) = x^3$, then find the composition f o g.

Q.5 Find the negation of the following statement –

   "He is rich and unhappy."

Q.6 What is a finite state machine?

Q.7 Define generating function.

Q.8 Define homomorphism and isomorphism of groups.

Q.9 What do you mean by a regular graph?

Q.10 Define Hamiltonian graph with example.

PART – B

(Analytical/Problem solving questions)   [5×4=20]

Attempt any five questions (Word limit 100)

Q.1 If in a city 60% of the residents can speak German and 50% can speak French. What percentage of residents can speak both the language, If 20% residents cannot speak any of these two languages?

Q.2 Let Q be the set of rational numbers. Show that the function $f:Q \rightarrow Q$ defined by $f(x)=2x+7$, $x \in Q$ is a bijective function. Also find $f^{-1}(0)$ and $f^{-1}(2)$.

Q.3 Prove the following logical implication with constructing truth table –

$(\sim P \lor Q) \land (P \lor R) \land (\sim Q \lor R) \Rightarrow R$

Q.4 Design a deterministic FSA that accepts strings of 0s and 1s as input for which the number of 1s is divisible by 3.

Q.5 How many words can be formed from the letter of the word "DAUGHTER" if the vowels always coming together?

Q.6 Show that the set $G = \{2^n \mid n \in Z\}$ is a group for multiplication.

Q.7 Determine whether the graph given below by its adjacency matrix is connected or not -

$$\begin{pmatrix} 0 & 1 & 1 & 1 \\ 1 & 0 & 1 & 0 \\ 1 & 1 & 0 & 1 \\ 1 & 0 & 1 & 0 \end{pmatrix}$$

PART – C

Attempt any three questions

Q.1 Let U be the set of positive integer not exceeding 1000, that is |U|=1000. Then using the pigeonhole principle find |S|, where S is the set of such integer which is not divisible by 3, 5 or 7?

Q.2 Find the disjunctive normal form of $P \to ((P \to Q) \wedge \sim (\sim P \vee \sim P))$.

Q.3 Solve the recurrence relation $s_n - 7s_{n-1} + 10s_{n-2} = 0$, $s_0 = 0$ and $s_1 = 3$ by using generating function where, $n \geq 2$.

Q.4 Show that the set of all square matrix of order (m×m) under the binary operations addition and multiplication is a non-commutative ring.

Q.5 Using Dijkstra's algorithm, find the shortest distance of all vertices from the vertex A for the graph shown in figure -

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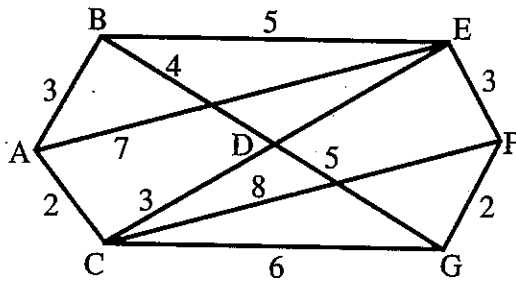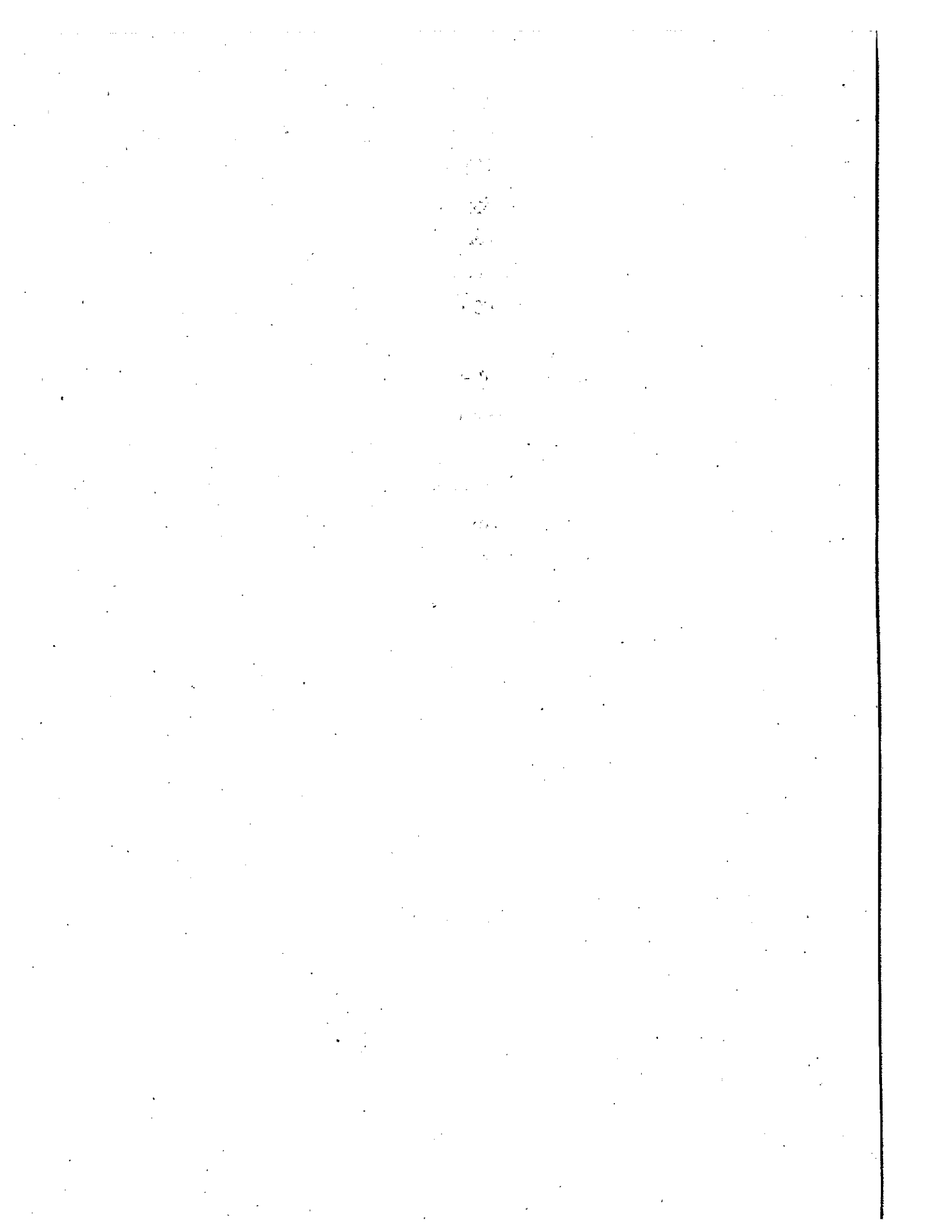
4E1302

4E1302
B. Tech. IV - Sem. (Main) Exam., - 2022
Computer Science & Engineering (AI)
4CAI1 – 03 Managerial Economics and Financial Accounting
All Branches

Time: 3 Hours   **Maximum Marks: 70**

Instructions to Candidates:

Attempt all ten questions from Part A. Five questions out of seven questions from Part B and three questions out of five from Part C.

Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL _____   2. NIL _____

PART – A

(Answer should be given up to 25 words only)   **[10×2=20]**

All questions are compulsory

Q.1 "Managerial economic supports manager to take decision for successful implementation of economic strategies." Comment upon this statement.

Q.2 Define GDP and NNP concepts of national income.

Q.3 What is meant by price elasticity?

Q.4 Elaborate the term circular flow of economy. Who are the main players involve in the circular flow of economy?

Q.5 What are the basic elements of demand and supply?

Q.6 Write the concept of opportunity cost with one example.

Q.7 Define Kinked demand curve and write one reason of price rigidity.

Q.8 Differentiate between deductive and inductive methods of economies.

Q.9 Discuss any two significant uses of cash flow statement.

Q.10 What is meant by debt, liabilities and current assets in accounting?

PART – B

(Analytical/Problem solving questions)   [5×4=20]

Attempt any five questions (Word limit 100)

Q.1 Define the concept of managerial economics. What are the micro and macro scopes of

economics? Explain all in brief.

Q.2 What is Law of demand? Draw the suitable diagram of demand curve and write its

determinants.

Q.3 Elaborate the cost and output relations in short run and long run. What is the role of

Marginal cost in decisions?

Q.4 How demand forecasting is useful for future decision making? Explain any two methods of

demand forecasting.

Q.5 Write the stages of production function. How manager can control the inputs in production? Define your answer with suitable table of inputs and diagram.

Q.6 How price, output and profit can be determined in perfect competition? Draw suitable diagram.

Q.7 Sttelio Ltd. presents the following information and you are required to calculate funds from operations –

Profit and Loss Account

	₹		₹
To Operation Expenses	1,00,000	By Gross Profit	2,00,000
To Depreciation	40,000	By Gain on Sale of Plant	20,000
To Loss on sale of Building	10,000		
To Advertising Suspense Account	5,000		
To Discount Allowed	500		
To Discount on issue of Shares written off	500		
To Goodwill written off	12,000		
To Net Profit	52,000		
	2,20,000		2,20,000

PART – C

Q.1 Define circular flow of economy with suitable diagram. Which are the current economic problems are facing by nation after pandemic situation (Year 2020 - 2021)?

Q.2 Define the term demand elasticity. What are the various degrees of elasticity? Define each with diagram and example.

Q.3 What is meant by least cost combinations in production function? Elaborate the properties of least cost combinations.

Q.4 Why price is rigid in market? Give reasons. Draw Kinked demand curve and how price and output can be determined under Kinked demand curve.

Q.5 Differentiate between –

(a) Demand curve and Supply curve

(b) Explicit cost and implicit cost

(c) Static economy and Dynamic economy

(d) Monopoly market and Monopolistic market

(e) Cash flow statement and Fund flow statement.

4E1304

4E1304

4E1304
B. Tech. IV - Sem. (Main) Exam., - 2022
Artificial Intelligence & Data Science
4AID3 – 04 Microprocessor & Interfaces
CS, AID, CAI

Time: 3 Hours   **Maximum Marks: 70**

Instructions to Candidates:

Attempt all ten questions from Part A. Five questions out of seven questions from Part B and three questions out of five from Part C.

Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL_____   2. NIL_____

PART – A

(Answer should be given up to 25 words only)   [10×2=20]

All questions are compulsory

Q.1 What is the function of ALE signal in 8085 up?

Q.2 Specify the size of data, address, memory word and memory capacity of 8085 up.

Q.3 State the function of following 8085 instructions –

   (i)   JP

   (ii) JPE

   (iii) JPO

   (iv) JNZ

Q.4 Write a program to add 7B H and 6A H using ADI instruction.

Q.5 Explain the PSW of 8085 up.

Q.6 Why data bus is bidirectional?

Q.7 Mention the purpose of SID and SOD lines.

Q.8 What are priority interrupts?

Q.9 List 16 bit registers of 8085 microprocessor.

Q.10 What is the purpose of Hold and Ready pins?

PART – B

(Analytical/Problem solving questions)   [5×4=20]

Attempt any five questions (Word limit 100)

Q.1 What is the use of addressing modes? Explain different types of addressing modes with example.

Q.2 What are stack related operations? Compare call and push instruction.

Q.3 Explain DAA instruction with an example.

Q.4 Write a program to add the contents of memory locations of 2000 H and 2001 H and place the results in memory location 2002 H.

Q.5 Compare the function of following instruction pairs –

(i)   JMP & CALL

(ii) STAX & LDAX

(iii) ANA & ANI

(iv) LHLD & LXI

Q.6 Show which interrupt will be masked if the following instructions are executed –

(i) MVI A, 10 H

(ii) SIM

Q.7 Write a 8085 program that enables RST 7.5 and RST 5.5 interrupts.

PART – C

(Descriptive/Analytical/Problem Solving/Design Questions)   [3×10=30]

Attempt any three questions

Q.1 Design 8085 up based system with following specifications –

(i) System frequency 3MHz

(ii) Interface 16 Kb EPROM using 8 Kb chip

(iii) Interface 32 Kb RAM using 16 Kb chip

Q.2 Draw the block diagram of 8279 Keyboard/display interface. Explain its operation also.

Q.3 Explain the evolution of microprocessor and list the sequence of events that occurs. When 8085 up reads data from memory.

Q.4 Draw the internal block diagram of 8251 USART and explain its initialization process.

Q.5 Compare RS – 422 A and RS – 423 A serial data standard.
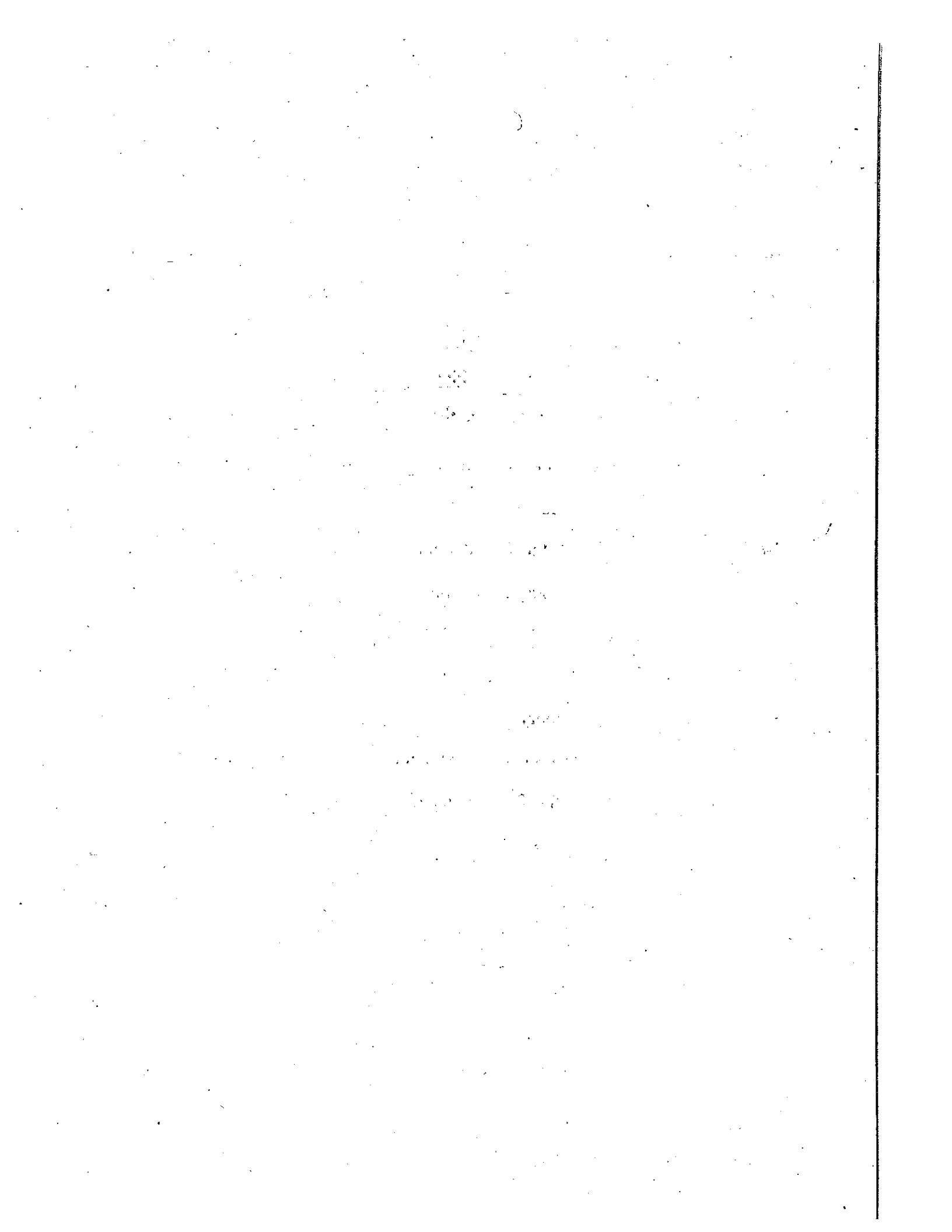
4E1305

B. Tech. IV - Sem. (Main) Exam., - 2022
Computer Science & Engineering
4CS4 – 05 Database Management System
CS, IT, AID, CAI

Time: 3 Hours

Maximum Marks: 70

Instructions to Candidates:

Attempt all ten questions from Part A. Five questions out of seven questions from Part B and three questions out of five from Part C.

Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL _____   2. NIL _____

PART – A

(Answer should be given up to 25 words only)   **[10×2=20]**

All questions are compulsory

Q.1 Which data independence is difficult to achieve and why?

   (a)   Physical data independence

   (b)   Logical data independence

Q.2 Consider the following schedule for three transactions T1, T2, T3, where R indicates a read of a Data item, W indicates a write of a data item and COM indicates a commit.

T1	R(A)						R(C)	W(B)	COM		
T2				R(A)	W(A)	COM					
T3		R(A)	R(C)							W(B)	COM

   (a)   Draw the dependency graph for this schedule.

   (b)   Whether the schedule is conflict serializable?

Q.3 What is the difference between strict two phase locking and simple two phase locking protocols?

Q.4 Which out of these are Data Manipulation Language (DML) commands and why? Create, Update, Alter, Delete, Drop, Insert.

Q.5 What are the properties of a weak entity? How the primary key of weak entity is defined when it is converted to a relation in relational model?

Q.6 What is the upper limit on number of primary keys and candidate keys for any relation in relational model?

Q.7 How does aggregate operators of SQL treat NULL values? Explain with example.

Q.8 Difference between Join and Cartesian product. Explain with an example.

Q.9 Draw a neat diagram of database system architecture.

Q.10 Draw a labeled transaction state diagram.

PART – B

(Analytical/Problem solving questions)   [5×4=20]
Attempt any five questions (Word limit 100)

Q.1 Explain the role and importance of relational algebra. Also, explain six basic operators of relational algebra with example.

Q.2 Consider a relation R (ABCDEF) where, A, B, C, D, E are the attributes of R. Consider functional dependency set F = {A->EC, C->D, B->F}. Find out candidate key(s) and check the highest normal form.

Q.3 Differentiate View and Conflict Serializability with an example.

Q.4 Consider two relation customers and orders with values as follows. What will be the result of natural join, left outer join, right outer join, and full outer join.

Customers

Customer Id	Name
1	Shreeram
2	Anubhuti
3	Jaya

Orders

Order Id	Customer Id
100	1
200	4
300	3

Q.5 Define briefly with example –
   (a) Data Integrity
   (b) Aggregation in E – R model
   (c) Tuple relational calculus
   (d) Cascadeless schedules

Q.6 Explain ternary relationship with example. Can we represent every ternary relationship with multiple binary relation?

Q.7 Differentiate Dynamic and Embedded SQL. Give example of Dynamic SQL.

PART – C

(Descriptive/Analytical/Problem Solving/Design Questions)   [3×10=30]

Attempt any three questions

Q.1 Write the algorithm for basic time stamp ordering protocol. For the below schedule S with transactions T1, T2, T3, whether the timestamp order T1, T2, T3 will successfully execute this schedule using basic time stamp protocol?

S: r1(A), r2(B), w1(C), r3(B), r3(C), w2(B), w3(A)

Here, ri and wi denote the read and write operations respectively by transaction Ti. A, B, C, are three data items.

Q.2 Explain shadow paging recovery protocol along with its pros and cons. How does this differ from log based recovery scheme?

Q.3 What is the role of normalization in database design? Explain first normal form, second normal form, third normal form and BCNF with example of each?

Q.4 Draw the E-R diagram for University management system with complete labeling Convert the drawn E-R diagram into relational model. For each relation in relational model, clearly specify primary key and foreign keys.

Q.5 Consider the following three relations with attributes shown in brackets for an organization.

employee (eno, ename, esalary, dcode),

dept (dcode, dname)

dependent (depndtname, eno, relation).

Here primary keys are underlined

Write SQL queries for the following –

(a) Show the names of employees with at least one dependent.

(b) List names of department(s) for which average salary for department is more than 10,000.

(c) Find the number of employees in each department.

(d) Find the name of department which have less than 10 employees.

(e) List all employees whose name contain at least one 'a' and one 'h' at any position.

(f) Find the total salary paid to employees of "accounts" department.

(g) Print the total number of employees whose salary is more than 40,000.

(h) Find the average salary of complete organization.

(i) Update the dcode of employee having eno = 101 to dcode = 10.

(j) Change the datatype of ename from char(20) to char(30).

4E1306

B. Tech. IV - Sem. (Main) Exam., - 2022

Computer Science & Engineering

4CS4 – 06 Theory of Computation

CS, IT, AID, CAI

Time: 3 Hours   **Maximum Marks: 70**

Instructions to Candidates:

   Attempt all ten questions from Part A. Five questions out of seven questions from Part B and three questions out of five from Part C.

   Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.

   Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL _____   2. NIL _____

PART – A

(Answer should be given up to 25 words only)   [10×2=20]

All questions are compulsory

Q.1   Define the Automata theory.

Q.2   Is the following set regular -

$$\{0^{2n} \mid n \geq 1\}$$

If yes, write down the corresponding regular expression. Else, prove that language is not regular.

Q.3   Is the set of odd – length strings over 0 regular, where the alphabet is $\Sigma = 0$?

Q.4   Construct a Deterministic Finite Automata (DFA) that accepts the language over $\Sigma = \{a, b\}$ in which length of string is divisible by three.

Q.5 What is Pigeonhole Principle?

Q.6 Define ambiguous grammar.

Q.7 Consider the following grammar and draw the left most and right most tree. (S, A, B are non terminals and rest are terminals symbols)

    S -> aScB | A | b
    A -> cA | c
    B -> d | A

Q.8 What is transition function? Write the transition function of Pushdown Automata.

Q.9 Draw the diagram of Turing Machine.

Q.10 What is NP – complete? Give one example.

PART – B

(Analytical/Problem solving questions)   [5×4=20]

Attempt any five questions (Word limit 100)

Q.1 Design a Mealy Machine that computes 2's complement of the given input binary number?

Q.2 Write regular expression (R) for the following (Σ = a, b) –

    (a) R that generate all string where length of string is at least 3

    (b) R that generate all string where every 'a' must followed by 'b'

    (c) R that generate all string contain second symbol from RHS is 'a'

    (d) R that generate all string where each string contain atmost two b's

Q.3 Convert the following Context Free Grammar (CFG) into an equivalent CFG in Chomsky Normal Form.

    $A \rightarrow BAB \mid B \mid \varepsilon, B \rightarrow 00 \mid \varepsilon$

(Only A and B are non terminal and rest are terminal)

Q.4 Design a Pushdown Automata (PDA) accepting $\{a^n b^m c^n \ m,n \geq 1\}$ by null store.

Q.5 Give the 5 examples of languages that cannot be accepted by Finite Automata but can be accepted by Pushdown Automata. Contrast the reasons behind it.

Q.6 What is the Chomsky Hierarchy of languages? Explain in detail.

Q.7 What is Hamiltonian path problem? Explain with suitable example.

PART – C

Q.1 Design a DFA (Deterministic Finite Automation) to accept the language $L = \{\alpha \in \{a, b, c\}^* \mid \alpha$ starts and ends with the same symbol$\}$. Only draw the transition diagram, and clearly indicate the start state and final state (s).

Q.2 What is the regular languages? Explain any three applications of regular languages in software (Compiler or web) design.

Q.3 Explain the model of Pushdown Automate with the help of suitable diagram.

Q.4 Design a Turing Machine which recognizes the language, $L = \{1^n 2^n 3^n$, where $n > 0\}$.

Q.5 Write an unrestricted grammar to accept the language, $L = \{a^i b^j c^k d^l \mid i = k$ and $j = 1\}$. Mention the start symbol of your grammar. Use upper – case Roman letters for non-terminal symbols.

4E1307

4E1307

B. Tech. IV - Sem. (Main) Exam., - 2022
Computer Science & Engineering
4CS4 – 07 Data Communication and Computer Networks
CS, IT, AID, CAI

Time: 3 Hours　　　　　　　　　　　　　　　　**Maximum Marks: 70**

Instructions to Candidates:

　　Attempt all ten questions from Part A. Five questions out of seven questions from Part B and three questions out of five from Part C.

　　Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.

　　Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL _____　　　　2. NIL _____

PART – A

(Answer should be given up to 25 words only)　　　　[10×2=20]
All questions are compulsory

Q.1　What is Data Communication?

Q.2　Differentiate Analog and Digital signals.

Q.3　What is ALOHA?

Q.4　Define Piggybacking.

Q.5　What is Tunneling?

Q.6　Write any two differences between classful and classless addressing.

Q.7　Write features of UDP.

Q.8　Write uses of Leaky Bucket Algorithm.

Q.9　What is SMTP?

Q.10　Draw Header format of HTTP reply message.

PART – B

Q.1 Explain OSI reference model with neat diagram.

Q.2 Describe Go Back N protocol.

Q.3 Explain, how congestion is controlled at network layer?

Q.4 Draw and explain TCP header format in detail.

Q.5 Explain DNS and its working.

Q.6 What is the purpose of Subnetting? Explain the use of masking in Subnetting.

Q.7 Explain the various network topologies in detail.

PART – C

Q.1 Explain the working of the following CSMA protocols in detail.

   (a)   Persistent

   (b)   Non – Persistent

   (c)   P – Persistent

Q.2 Explain IPv4 Header format in detail. Compare it with IPv6.

Q.3 Describe File Transfer Protocol (FTP) with suitable diagram. Explain SNMP.

Q.4 Explain types of sliding window ARQ error control. How do they differ form each other?

Q.5 What are three way handshaking protocol in TCP? Explain, why connection termination in TCP is symmetric, whereas connection establishment is not?

4E4161
B. Tech. IV - Sem. (Back) Exam., - 2022
Computer Science & Engineering
4CS2A Discrete Mathematical Structure

Time: 3 Hours

Maximum Marks: 80
Min. Passing Marks: 24

Instructions to Candidates:

*Attempt any **five** questions, selecting **one** question from **each** unit. All questions carry **equal** marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly.*

Units of quantities used/calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. <u>NIL</u> _____

2. <u>NIL</u> _____

<u>UNIT- I</u>

Q.1 (a) Each student in Liberal Arts at some college has a mathematics requirement A and a science requirement B. A poll of 140 sophomore students shows that: 60 completed A, 45 completed B, 20 completed both A and B. Use a Venn diagram to find the number of students who have completed - [8]

    (a) At least one of A and B

    (b) Exactly one of A or B

    (c) Neither A nor B

(b) Let $f: R \rightarrow R$ be a function defined as $f(x) = 3x + 5$ and g: $R \rightarrow R$ be another function defined as g(x) = x + 4. Find $(gof)^{-1}$ and $f^{-1}og^{-1}$ and verify $(gof)^{-1} = f^{-1}og^{-1}$. [8]

OR

Q.1 (a) Let A={1, 1, 1, 2, 2, 3, 4, 4} and B={1, 2, 4, 4, 5, 5, 5}. Find A∪B, A∩B, A – B and A + B. [8]

(b) Define the followings with example – [8]

    (i) Polynomial function

    (ii) Floor function

    (iii) Ceiling function

    (iv) Remainder function

UNIT- II

Q.2 (a) Define the following with example – [8]

    (i) Equivalence relation

    (ii) Partial order relation

    (iii) Total order relation

    (iv) Cross partition of a set

(b) Consider A = {4, 6, 8, 10} and R = {(4, 4), (4, 10), (6, 6), (6, 8) (8, 10)} is a relation on a set A. Determine the transitive closure of R using Warshall's Algorithm. [8]

OR

Q.2 (a) Suppose that R and S are reflexive relations on a set A. Prove or disprove the following statements – [8]

    (i) R ∪ S is reflexive

    (ii) R ∩ S is reflexive

    (iii) R – S is irreflexive

    (iv) SoR is reflexive

(b) Let R be an equivalence relation on a set of positive integers defined by x R y if and only if $x \equiv y \pmod 3$. Then, find the equivalence class of 2 and also find the partition generated by the equivalence relation. [8]

UNIT- III

Q.3 (a) Prove that $7^{2n} + 2^{3n-3}.3^{n-1}$ is divisible by 25 for all positive integers. [8]

(b) Compute the product AB by using Strassen's matrix multiplication algorithm, where - [8]

$$A = \begin{bmatrix} 2 & 4 \\ 3 & 5 \end{bmatrix} \text{ and } B = \begin{bmatrix} 1 & 6 \\ 3 & 2 \end{bmatrix}$$

OR

Q.3 (a) Using the concept of mathematical induction, prove that - [8]

$$P(n) = 1 + 2 + 3 + \cdots + n = \frac{n(n+1)}{2}, n \geq 1$$

(b) Explain any two of the followings – [8]

(i) Algorithm correctness

(ii) Searching algorithm

(iii) Sorting algorithm

UNIT- IV

Q.4 Explain the following with example –

(a) Complete graph [4]

(b) Bipartite graph [4]

(c) Complete Bipartite graph [4]

(d) Weighted graph [4]

OR

Q.4 (a) Determine whether the graph given below by its adjacency matrix is connected or not. [8]

$$\begin{pmatrix} 0 & 1 & 1 & 1 \\ 1 & 0 & 1 & 0 \\ 1 & 1 & 0 & 1 \\ 1 & 0 & 1 & 0 \end{pmatrix}$$

(b) Using Dijkstra's algorithm, find the shortest distance of all vertices from the vertex A for the graph shown in figure. [8]
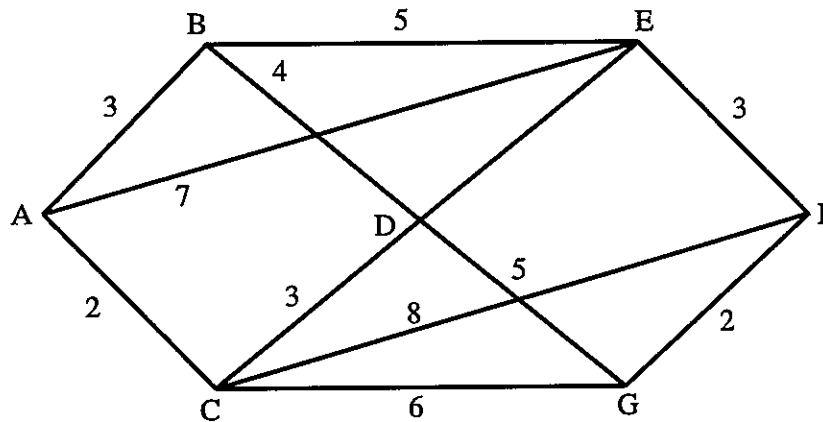
UNIT- V

Q.5 (a) Express $P \leftrightarrow Q$ using $\downarrow$ and $\uparrow$ only. [8]

(b) Prove the following logical implication with constructing truth table - [8]

$(\sim P \lor Q) \land (P \lor R) \land (\sim Q \lor R) \Rightarrow R$

OR

Q.5 (a) Check the validity of the following argument – [6]

If I go to school, then I attend all classes. If I attend all classes, then I get A grade. I do not get grade A and I do not feel happy. Therefore, if I do not go to school then, I do not feel happy.

(b) By constructing the truth table, show that $(\sim P \land (P \lor Q)) \rightarrow Q$ is a tautology. [4]

(c) Explain the following – [6]

(i) Argument

(ii) Predicates

(iii) Quantifiers

4E4163
B. Tech. IV Sem. (Back) Exam., May - 2019
Computer Science & Engineering
4CS4A Software Engineering
CS, IT

Time: 3 Hours

Maximum Marks: 80
Min. Passing Marks: 26

Instructions to Candidates:

Attempt any **five questions**, selecting **one question** from **each unit.** All questions carry **equal** marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly.

Units of quantities used/calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL _____ 2. NIL _____

UNIT- I

Q.1 (i) Explain the system development life cycle (SDLC) in detail. [8]

(ii) Explain system level project planning in detail. [8]

OR

Q.1 (i) What is system? Differentiate between System Engineering and Software Engineering. [6]

(ii) Discuss major problem in system development. [5]

(iii) List and describe characteristics of a good software. [5]