B.Sc IT

Computer Fundamentals and Digital Electronics - 1 Sem

C1

- 1. What is computer? Explain the classification of computers in detail.
- 2. (a) Add binary numbers 10011.12+11011.012
 - (b) Multiply the binary numbers 1112*1012
 - (c) Subtract the binary numbers 11002-10012
 - (d) Divide the binary numbers 10002/10
- 3. Encode the following decimal number in BCD code:
 - a) 786 b)5291.09 c)8916

C2

- 1. Prepare a karnaugh map for the following functions.
- (a) F = ABC + A'BC + B'C'
- (b) F=A+B+C
- (c) Y=AB+B'CD
- 2. Design a half-adder using NOR gates only.
- 3. Distinguish between the following:
 - (a) Decoders and encoders
 - (b)Multiplexer and Demultiplexer

Concept of 'C' Programming



C1

- 1. Explain the different types of contants available in 'C'
- 2. Write a program to accept the currency in dollars convert it into rupees and display the result.
- 3. Write a program to compute the area of following geometric shapes:
 - (a)Rectangle (b) Cone (c)Cylinder.

C2

- Write a 'C' program to accept the color of the rainbow in integer (1-orange,7-red)and display the color in words using switch statement.
- 2. Write a 'C' program to generate 'N' terms of a Fibonacci series using recursion.
- 3. Write a 'C' program to remove all duplicate element in an array.

Discrete Mathematical Structure - I Sen

C1

- 1. What is set? Discuss its types in details with suitable examples.
- 2. Discuss Cartesian product and tree representation with a neat diagram.
- 3. Explain Well Formed Formula (WFF) Tautology and contradiction with examples.

C2

- 1. Explain Mathematical induction with examples.
- 2. Discuss pigeonhde principle with an example.
- 3. What are isomorphic graphs? State the conditions for graphs to be isomorphic give examples.

Advanced Concept of 'C' programming - II Sem

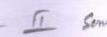
C₁

- 1. Explain all the library functions with syntax. Example to read the strings.
- 2. Discuss pointer expressions with examples.
- 3. What is points to pointer? Explain with example.

C2

- 1. Explain with example creating a text file.
- 2.Discuss formatted and unformatted I/O functions with example.
- 3.(a) Describe set fill style () and flood fill () graphics function.
 - (b) Briefly explain displaying text in 'C' graphics.

Fundamentals of Data Structures.



C1

- 1. Write an algorithm to convert infix to postfix
- 2. What is Stock? Explain the basic operations of stock data structures.
- 3. What is Dequeue? Explain different types of dequeue with suitable example.

C2

- 1. What are linked lists considering all possible cases.
- 2. What are circular linked lists? Design an algorithm to delete alternative occurrence of an element from a circular linked list.
- 3. What is meant by traversing a binary tree? Describe the in order, preorder, post order procedure to traverse a binary tree represented ion adjacency matrix.

Matrix Algebra - II Sem

C1

- 1.If two rows (or columns) of a determinant are interchanged then the value of the determinant changes in sign only.
- 2. Find the adjoint of the Matrix A $\begin{pmatrix} 1 & 2 \\ 3 & 6 \end{pmatrix}$
- 3. Find all eigen values and eigen vectors of Matrix : $A = \begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix}$

- 1. Find the rank of the matrix using normal form $\begin{bmatrix} 0 & 1 & 2 & -2 \\ 4 & 0 & 2 & 6 \\ 2 & 1 & 3 & 1 \end{bmatrix}$
- 2. Show that the set of all 2*2 matrices over the field of read numbers is a vector space.
- 3. Find the matrix of linear transformation $T: R^2R^3$ defined by T(x:y)=(2x-5y,3x+y) relative to the basis $\{(2,1)(3,2)\}$ of R^2