

# **Sai Nath University**

## **Assignment For Diploma in C.S Engineering 5<sup>st</sup> Sem.**

The Assignment will consist of two parts, A and B. Part A will have 5 short answer questions(40-60 words) of 4 marks each. Part B will have 2 long answer questions of 10 marks each

### **All questions are compulsory.**

These Assignments should be completed and submitted in written form by the student to his/her respective Faculty/ Examiners. Assignment Submission Dates are:

➤ Nov-17

### **List Of Suggested Questions**

The list of suggested questions are for students to practice. Although optional, we recommend that students solve these questions, as they will help them in preparing for exams as well as in clearing the important concepts of the subject.

### **List of Practical and suggested practical's**

The list of practical's should be done by the students in their Lab Sessions. These are the basic practical's, which each student should be able to do himself independently. While the list of suggested practical's are optional, but it is recommended that students should perform those practical so as to have a thorough knowledge of the subject

### **Education Delivery Schedule (EDS)**

As per University Semester scheme, the minimum contact hours of each paper has been Divided into two hours theory and practical class.

The faculty will maintain this attendance paper wise for his/her batch.

**Subject Code****Subject Name****DECSE-501****Peripheral device &  
Measuring Instruments****DECSE-502****Database Management  
System****DECSE-503****Electronics Communication  
System****DECSE-504****PC Architecture and  
Maintenance****DECSE-505****Data Structure.****DECSE-506****DBMS Practical****DECSE-507****Data Structure Practical**



## **SAI NATH UNIVERSITY**

### **Cover page of Assignment**

ID NUMBER .....

NAME .....

COURSE Diploma Engineering.....

STREAM C.S.....

SEM 5<sup>st</sup> .....

SUBJECT CODE .....

SUBJECT NAME .....

**Assignments will be completed by the Student in his/her own handwriting.**

**DECSE-501**  
**Peripheral device & Measuring Instruments**  
**Part A**

1. Explain the structure of a computer with the help of a diagram.
2. Explain the concepts of multiprogramming with the help of a diagram.
3. Explain the structure of Windows with the help of a diagram.
4. Explain the memory system of a computer.
5. What is Windows?

**Part B**

1. What is a Computer? Importance of Computers (Man vs. Machine)?
2. Generation of Computers. With all suitable examples?

**DECSE-502**  
**Database Management System**  
**Part A**

1. What are M-Way Search Trees and how can they be used for Indexing ?
2. Describe the Network Model and its implementation.
3. What is Referential Integrity ? Describe with the help of an example.
4. what is ISAM ? Describe the various types of Indexes.
5. what are Views ? Describe with the help of an example.

## **Part B**

1. Explain the differences between a weak entity and a strong entity with the help of an example.
2. Describe the View Updating Rule and the Integrity Rule.

## **DECSE-503**

### **Electronics Communication System**

## **Part A**

- 1) What are flip-flops ? Describe the construction of a master-slave flip-flop using R-S flip-flops.
- 2) What are the various fields of a simple instruction ? Explain with the help of a diagram.
- 3) Give different types of flip fops. Explain any one flip flop in detail.
- 4) Explain Intrinsic and Extrinsic semiconductors.
- 5) Explain the operation of a P-N junction diode in the forward biased condition and draw the forward characteristics.

## **Part B**

1. Draw the circuit diagram of full wave bridge rectifier and draw its input and output waveforms.
2. Explain the logic diagram of a 3 x 8 Decoder.

**DECSE-504**  
**PC Architecture and Maintenance**  
**Part A**

1. Explain three Displacement Addressing mechanisms with the help of examples.
2. Simplify the following function using K-map :

$$F(A, B, C, D) = 1(2, 6, 10, 14)$$

Draw the resultant logic diagram.

3.  $(569)_{10}$  to Binary number.
4.  $(23.125)_{10}$  to Hexadecimal number .
5. What are microinstructions ? Describe the horizontal and vertical microinstruction formats with the help of a diagram.

**Part B**

1. Explain the use of Code Segment (CS) and Data Segment (DS) registers in 8086 microprocessor with the help of examples.
2. What are the various fields of a simple instruction ? Explain with the help of a diagram.

## **DECSE-505 Data Structure.**

### **Part A**

1. Write a program in 'C' language to implement Quick Sort.
2. Write a program in 'C' language that accepts a file as input and prints the number of alphabets in it. Write a program in 'C' language for the implementation of a Singly Linked List
3. Write a program in 'C' language that accepts a string as input and prints the number of vowels in it.
4. Write a program in 'C' language for the multiplication of two Sparse Matrices.
5. Write a program in 'C' language that accepts a Singly Linked List as input and reverses it.

### **Part B**

1. Differentiate between sequential search and binary search. Write their algorithms and analyze the techniques for complexity.
2. Write an algorithm to add two polynomials when they are represented using linked lists.

## **DECSE-506 DBMS Practical Part A**

1. **Create the following database defined below : 10\*4=40**

EMPLOYEE (ENo, EName, Birth\_Date, Address, DNo)

DEPARTMENT (DNo, DName, DManager)

DEPT\_LOCATION (DNo, DLocation, Country)

WORKS\_ON (ENo, PNo, Hours)

PROJECT (PName, PNo, PLocation, DNo)

Select appropriate datatypes for each of the fields. Input meaningful data of at least 10 records.

**2. For the above database created in Q.1, answer the following queries using SQL :**

- (a) To find the EName and ENo of all the employees who work for PNo = 111.
- (b) To display the no. of hours allocated for ENo = 001.
- (c) To display all the projects whose PLocation is "Delhi".
- (d) To display all the DNos and DLocations.
- (e) To display all the ENos and ENames of the company.

**3. Create the following table with the fields given below :**

Book (ISBN, Title, Author\_1, Author\_2, Publisher, Year, Price, No\_of Pages,

Subject\_Category) Select ISBN as the primary key. Insert 20 meaningful records.

Select appropriate datatypes for all the fields.

**4. For the above table in Q.1, answer the following queries using SQL :**

- (a) Display all the ISBNs of Subject\_Category = "Computer\_Science".
- (b) Display all the Titles whose price is ?\_ 500.
- (c) Display all the Authors whose name starts with "A".
- (d) Display the list of all the Publishers.
- (e) Display all the details of the books which are published in 2003 or before.



**DECSE-507**  
**Data Structure Practical**  
**Part A**

- 1.** Write an algorithm for the addition of two matrices.
- 2.** Write an algorithm to add two polynomials when they are represented using linked lists.
- 3.** Differentiate between sequential search and binary search. Write their algorithms and analyze the techniques for complexity.
- 4.** Define 'Tree' and 'Binary Tree'. Explain the differences between them.
- 5.** Convert the following infix expression to postfix expression :

$$A * (B + D) / E - F * (G + H/K)$$

**Part B**

- 1.** Write an algorithm for implementation of various operations on a circular queue.
- 2.** Insert the following keys in order to construct an AVL tree : 5, 4, 3, 1, 2

\*\*\*\*\*