Sai Nath University

Assignment For DIPLOMA Engineering in CS 4TH 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 4 long answer questions of 5 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:

- **June-18**

List Of Suggested Questions

The list of suggested questions is 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 practicals 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 401	**DIGITAL TECHNIQUE & APPLICATION**
DECSE 402	**COMPUTER PERIPHERAL & INTERFACING**
DECSE 403	**COMPUTER COMMERCIAL APPLICATION AND SYSTEM ANALYSIS**
DECSE 404	**OBJECT ORIENTED PROGRAMMING**
DECSE 405	**MICROPROCESSOR AND PROGRAMMING**
DECSE 406	SOFTWARE LAB

SAI NATH UNIVERSITY

Cover page of Assignment

ID NUMBER	……
NAME	…… ……
COURSE	Diploma Engineering ……
STREAM	CS……
SEM	4^{TH} ……
SUBJECT CODE	……
SUBJECT NAME	……

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

DECSE - 401

Digital Technique & Application

Part A

1. Explain the logic diagram of a 3 x 8 Decoder.
2. Explain three Displacement Addressing mechanisms with the help of examples.
3. (23.125) 10 to Hexadecimal number.
4. (6B•28) 16 to Binary number .
5. What are the various fields of a simple instruction ? Explain with the help of a diagram.

Part B

1 Simplify the following function using K-map :

F(A, B, C, D) = 1(2, 6, 10, 14) Draw the resultant logic diagram.

2. What are flip-flops ? Describe the construction of a master-slave flip-flop using R-S flip-flops.
3. What is an interrupt? Explain the processing of an interrupt in 8086 microprocessor with the help of a diagram.

4. Explain the use of Code Segment (CS) and Data Segment (DS) registers in 8086 microprocessor with the help of examples

DECSE- 402

Computer Peripheral & Interfacing

Group A

1. Explain the structure of a computer with the help of a diagram.?
2. Explain the concepts of input device with the help of a diagram.?
3. Explain the characteristics of Twisted pair cables and Fiber optic cables in the context of communication channels?
4. What is output device? Explain different type of output device in details? .

Group B

1. Explain different type of printer?
2. What is memory explain its type in details?
3. Differentiates between Primary and secondary memory?
4 .Define MICR and OCR in details?
5. What is plotter and joystick?

DECSE- 403

Computer Commercial Application and System Analysis

Group A

1 Draw the context diagram and a set of data flow diagrams for developing a library management system with the following functionalities. List the assumptions made in your analysis.

2 What is document configuration? Why is it needed?.

3 What are the limitations of the Waterfall model?

4 Explain how management information systems help senior managers in decision making with an illustrative example.

Group B

1Draw the schematic diagram of spiral model and explain the various phases involved in it. For which types of development projects is spiral model suitable ?

2 Summarize the advantages of using CASE tools in systems analysis and design.?

3 Draw flow-chart representation of branching and 10 looping constructs.

4 What do you mean by a layered architecture? What are the advantages of a layered architecture?

5 Distinguish between white-box and black-box testing methods.

DECSE- 404

Object Oriented Programming

Group A

Q1. What is Object Oriented Programming (OOP) approach? Explain how OOP is better than structured programming.

Q 2. Explain use of different operators of C++ , with the help of examples.

Q 3. Write a C++ program to overload '+' operator in such a way that it return the sum of lengths of two strings (Note: if S1 and S2 are two strings then S1+S2 or S2 + S1 should give the sum of lengths of S1 and S2).

Q 4. What is inheritance? What are different types of inheritance? Explain how multiple inheritance is implemented in C++, with the help of a program.

Group B

Q1. What is constructor? Explain how it is overloaded, with the help of a C++ program.

Q2 . Explain how an object is passed as a parameter to a function, with the help of a program.

Q3. What is exception? How exceptions are handled in C++? Write program to handle stack overflow as exception.

Q4. What is template? Write appropriate statements to create a template class for Queue data structure in C++.

DECSE -405

Microprocessor and programming

Group A

1 Name the various type of buses of 8085 Microprocessor?

2 Draw the pin diagram 8085 microprocessor and explain its various pins?

3 what is program status word in 8085 Micro processor?

4 what are the various type of interrupts available in 8085 microprocessors?

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Group B

Q1 Explain 8259 chip with the help of block diagram?

Q2 Name the various mode of operations in 8253?

Q3 Differentiates between 8085 and 8086?

Q4 Define memory and its various types?

5Define PAL and PLA using suitable diagram?

DECSE 406

Object Oriented Programming [SOFTWARE LAB]

Group A

1 .Write a C++ program to add two complex numbers. In this program you need to create complex class and define proper constructor for object initialization.

2. What is an abstract class ? How do you create an abstract class ? What is the purpose of creating an abstract class in object oriented programming paradigm ? Explain with the help of an example.

3. What do you understand by friend function ? Write a C++ program to find out the sum of n given numbers using friend function.

4. Write a C++ program to find the sum of two complex numbers. Define proper class, constructor and method(s) in your program. Give comments to make your code more understandable.

Part B

1. Write a C++ program to find the area of the following shapes. Use function overloading to implement this program :

   (i) Circle

   (ii) Rectangle?

2.Write a C++ program to create Employee class. Define proper constructor and destructor.

Define the method to display employee information such as name, age and designation. Also define the method to calculate salary.

Salary = Basic + TA + DA; TA is 10% of the Basic and DA is 80% of the Basic.

Make necessary assumption required.