Sai Nath University

Assignment For Diploma E&C 6th 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
DEEC601	ADVANCED INDUSTRIAL ELECTRONICS
DEEC602	POWER ELECTRONICS
DEEC603	DIGITAL COMMUNICATION SYSTEM
DEEC604	PROJECT
DEEC605	PRACTICAL

SAI NATH UNIVERSITY

Cover page of Assignment

ID NUMBER	……
NAME	…… ……
COURSE	DIPLOMA……
STREAM	E&C……
SEM	6^{TH} ……
SUBJECT CODE	……
SUBJECT NAME	……

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

SUB.CODE-DEEC601

SUB-ADVANCED INDUSTRIAL ELECTRONICS

Part A

Q1. Explain the construction and characteristics of DIAC.

Q2.briefly explain the Three-phase Delta-Wye Bridge Rectifier

Q3.briefly explain the working principle of GTO

Q4.explain about Resistance Capacitance (RC) Firing Circuit

Q5. Explain the forward voltage triggering and gate triggering methods for turning on a thyristor.

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Part B

Q6. Explain the V - I characteristic curve of UJT. Why is it called current-controlled negative-resistance device?

Q7.Explain the construction and draw the volt - ampere characteristic of an Insulated Gate Bipolar Transistor (IGBT).

Q8. Draw a two-transistor representation of a silicon-controlled rectifier (SCR) and describe the method and condition for its conduction.

Q9. Give the schematic representation of the basic structure of a power transistor and explain its working.

SUB.CODE-DEEC602

SUB-POWER ELECTRONICS

Part A

Q1. The turn-off process in a GTO can be described with its two-transistor model. Explain this in detail.

Q2.briefly explain the working principle of Power MOSFET

Q3.what is Synchronous Drives?

Q4. With the help of a neatly labeled circuit diagram explain the working principle of a single-phase full wave half-controlled bridge rectifier using two SCRs and two diodes.

Q5.Explain the V - I characteristic curve of UJT. Why is it called current-controlled negative-resistance device?

Part B

Q6.Describe the working of a single-phase full converter in the inverter mode with RLE load. Illustrate your answer with waveforms for source voltage, E, load voltage and current, source current, current through and voltage across SCR.

Q7. For a single-phase half-wave controlled rectifier system, sketch the waveforms for load voltage and load current for (i) RL Load, and (ii) RL load with freewheeling diode.

Q8. A step-down chopper, fed from 220 V D.C., is connected to RL load with R = 10 Q and L = 150 mH. Chopper frequency is 1250 Hz and duty cycle is 0.5. Calculate the (a) minimum and maximum values of load current, (b) maximum value of ripple current, (c) average and rms values of load current, and (d) rms value of chopper current.

Q9. Discuss the principle of working of a three-phase bridge inverter with an appropriate circuit diagram. Draw and explain the phase and line voltage waveforms on the assumption that each thyristor conducts for 120°.

SUB.CODE-DEEC603

SUB-DIGITAL COMMUNICATION SYSTEM

Part A

Q1.Discuss in brief the advantages and disadvantages of digital communication.

Q2. With neat sketches, discuss different pulse modulation techniques and compare them.

Q3. What is the Spread Spectrum Characteristics.

Q4.what is Hamming Code.

Q5.briefly explain the DPCM.

Part B

Q6. With neat block diagrams of transmitter and receiver, explain the working of QPSK and DPSK. Also write their advantages and disadvantages.

Q7. What are the different line codes that are used for digital communication system? Discuss their classification along with waveforms.

Q8. Write down the salient features of CDMA technique.

Q9. Discuss delta modulation with neat block diagram for its generation and detection. Also state the condition for occurrence of slope-overload.

DEEC-604

PROJECT LIST.

1. **Automatic Door Bell With Object Detection**
2. **Automatic Washroom Light Switch**:
3. **Water Level Indicator**:
4. **Password Based Door Lock System using 8051 Microcontroller**
5. **Auto Night Lamp using High Power LED**:
6. **Bipolar LED Driver Circuit**:
7. **Car Parking Guard Circuit Using Infrared Sensor**

DEEC605

LIST OF PRACTICALS

1. Plot the frequency response of two stages RC coupled amplifier and calculate the bandwidth and compare it with single stage amplifier

2. To measure the gain of push-pull amplifier at 1 KHz

3. To measure the voltage gain of emitter follower circuit and plot its frequency response

4. Plot the frequency response curve of Hartley and Colpitts Oscillator

5. Plot the frequency response curve of phase shift and Wein Bridge Oscillator

6. To observe the output waveforms of series and shunt clipping circuits

7. To observe the output for clamping circuits