Sai Nath University

Assignment For B.TECH in C.S Engineering 3rd 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 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
BTCSE 301	Mathematics-3
BTCSE -302	switching circuit & logic desi
BTCSE-303	Signal & Network
BTCSE -304	Digital Electronics
BTCSE 305	Electrical Machine
BTCSE 306	Practical Electronics
BTCSE 307	Practical Electrical Machine

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Cover page of Assignment

ID NUMBER   ……………………………………………

NAME   …………………………………… …………

COURSE   **B.Tech**……………………

STREAM   C.S…………………………………

SEM 3ST………………………………………..

SUBJECT CODE   …………………………………………..

SUBJECT NAME   …………………………………………..

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

BTCSE 301
Mathematics-3
Part A

1. Find the local maximum and local minimum, if any, for the function

F(x)=sinx+cosx, $0<x<\pi/2$.

2. Find points at which the tangent to the curve $y=x^3-3x^2-9x+7$ is parallel to x-axis.

3. Derive the derivative :-

(a) $y= \sin(\log x^2+9x+1)$

(b) $y = \sin x^{\cos x}+\cos x^{\sin x}$

4. Differentiate $\frac{(3x2+2x+5)}{\sqrt{x}}$

5. Find the first and second partial derivative od $z=x^3+y^3-3axy$.

Part B

1. $\int_0^a \frac{x^7}{\sqrt{a-x^2}^2}dx$

2. Form the differential equation of the family of curves represented by the equation $(2x+a)^2+y^2=a^2$.

BTCSE 302
Switching circuit & logic design

Part A

1. Define Boolean algebra and Logic gates?

2. Convert OR,AND & Not gates into NAND,NOR logic gates?

3. Define K-Map?

4. Find the reduced sop form of the following function?

   F(A,B,C,D)=m(0,6,7,8.9.10,12)+ d(2,4,5,13)

5. Define flip-Flop,edge Triggered Flip-Flop?

Part B

1. Registers and Application ofShift- registers?

2. Define up/Down Synchronous counters?

BTCSE-303
Signal & Network

Part A

1. Define Signalk & types of Signals?

2. Define the System & types of system?

3. What is Laplace Tranform & state thre ROc of Laplace Tranform?

4. Evaluate the Laplace Tranform of given function?   x(t)=t

5. stae intial and final vaue theorem?

Part B

1. Evaluate the Convolution integral of function?

2. What do you mean by pole & zero of the Network?

BTCSE-304
Digital Electronics
Part A

1. what do you mean by fanout & TTL logic family?
2. Define BCD Adder?
3. Demultiplexer ,Decoder,& Encoders?
4. What is ROM & PLA?
5. Differentiate between Combinational & Sequential Logic CKts?

Part B

1. Define R_S Flip Flop?
2. Define J-K S Flip Flop?

BTCSE-305
Electrical Machine
Part A

1) Explain energy band diagram of insulator, semiconductor and conductor.

2) Explain the inverting amplifier application of operational amplifier.

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. Draw the block diagram of a regulated D.C. power supply and explain the function of each block in it with relevant waveforms.

BTCSE-306
Practical Electronics
Part A

1. Wiring and connection of wattmeter and its use

2. Study of logic gate with the help of logic gate kits.

3. Making of Extension Board.

4. Connection of switches fuse and socket on the extension Board.

5. Speed Regulation of fan connection.

Part B

1. Norton's & Thevenin's theorem proof with the help of kit .

2. Solies and parallel connection with the kit present in lab

BTCSE-307
Practical Electrical Machine
Part A

1. Determine the shear strength of the given specimen.

2. (a) Determine the Charpy's impact strength for the given specimens.

   (b) Determine the Brinnel's Hardness number for the given specimens.

3. (a) Find the Hardness number for the given thin metal sheet.

   (b) Determine the IZod impact strength for the given specimen.

4. Conduct a compression test on the given helical spring and determine the following

5. Determine the Young's modulus of the material of the steel beam by conducting the deection test.

Part B

1. Determine Rockwell Hardness number for the given specimens

2. Conduct the tension test on MS rod and determine the following values   (a) yield stress   (b) ultimate stress