J.S.University

Assignment For B.Tech 2nd 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/Examiner. Assignment Submission Dates are:

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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 Practicals and suggested practicals

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.

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Cover page of Assignment

ID NUMBER ……

NAME ……

COURSE B.Tech……

STREAM ……

SEMESTER ……

SUBJECT CODE ……

SUBJECT NAME ……

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

Subject Name
Electronic Engg
Electrical Engineering
Engg. Physics II
Engg. Chemistry
Basic Manufacturing Process
Mathematics-II

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B.Tech 2nd Semester

Assignment: Electronics Engg.

Part A

Q1:Explain the PN-junction diode.Also define the depletion layer?

Q2:Explain the VI-Characteristics Graph for PN-Junction Diode?

Q3:Explain the Zener effect and Avalanche effect of Diode?

Q4:Explain the “Bipolar Junction Transistor”?

Q5:Explain the Inverting and non-inverting Amplifiers?

Part-B

Q1:Explain Different types of MOSFET in detail?

Q2:Explain the principle of CRT with its Block diagram?

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B.Tech 2nd Semester

Assignment: Electrical Engg.

Part A

Q1:Explain kirchhoff's current and voltage law?

Q2:Explain the Star-Delta Transformation?

Q3:Define Sinusoidal, square and triangular waveforms?

Q4:Derive the EMF equation of single phase transformer?

Q5: Describe Hysteresis and eddycurrent losses?

Part B

Q1:Derive Maximum PowerTransfer theorem?

Q2:Derive EMF equation of generator and torque equation of motor?

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B.Tech 2nd Semester

Assignment: Engg. Physics II

Part A

Q1:Define Space lattice, basis, Unit cell?

Q2:Explain Seven crystal systems and Fourteen Bravais lattices ?

Q3:Describe the Bragg's Law ?

Q4:Explain the Types of Polarization in detail ?

Q5: Explain Dia, para and ferro magnetism properties of a material?

Part B

Q1:Describe the structure, properties and uses of Fullerene?

Q2:What do you mean by "Superconductor".Explain Type-I and Type-II Superconductor?

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B.Tech 2nd Semester

Assignment: Engg. Chemistry

Part A

Q1:Define a Unit Cell .Derive the Density of different types of Unit Cell?

Q2:Differentiate between Thermoplastic and Thermosetting plastic?

Q3:Write short note on the formation of Cement and plaster of paris?

Q4:Explain Corrosion and its causes.List some preventive steps of corrosion?

Q5:Describe the different types of water softening Techniques ?

Part B

Q1: Describe the structure and applications of Graphite and Fullerenes?

Q2:What do you mean by Hardness of water.Give the Disadvantage of hard water?

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B.Tech 2nd Semester

Assignment: Basic Manufacturing Process

Part A

Q1:Explain any four Mechanical Properties of Material?

Q2:Define different types of Steel and it's uses?

Q3:Differentiate between hot-working and cold-working?

Q4:Explain Die-casting and its uses?

Q5:Explain Resistance welding?

Part B

Q1: Describe Shaper-Planer machine with its line diagram?

Q2:Explain the Heat- treatment process of carbon steels?

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B.Tech 2nd Semester

Assignment: Mathematics-II.

Part A

Q1. Solve the differential equation

$$\frac{d^2y}{dx^2} + 4y = tan2x$$

Q2. Solve the equation $x^2y'' + xy' - \left(4x^2 + \frac{1}{2}\right)y = 0$

Q3. Consider the two functions f(t) = h(t)h(3 − t) and g(t) = h(t) − h(t − 3). (a) Are the two functions identical? (b) Show that L[f(t)] = L[g(t)].

Q4. Find

$$L^{-1}\left(\frac{-2}{s^2} + \frac{1}{s+1}\right)$$

Q5. Let the function f(x) be 2π-periodic and suppose that it is presented by the Fourier series:

$$f(x)=\frac{a_0}{2} + \sum_{n=1}^{\infty}\{a_n cosnx + b_n sinnx\}$$

Calculate the coefficients $a_0, a_n \text{ and } b_n$.

Part B

Q1. Consider the equation

$$u\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} = x$$

and the initial curve S:(x,y)= (s,s) for s>0. Decide whether there is a unique solution,no solution or infinitely many solutions in neighbourhood of (1,1) for each of the following initial conditions on S:

a) u=2s
b) u=s
c) u=sin$\frac{\pi}{2}s$

Q2. Find the Fourier series to represent f(x)=x^2 in the interval (0,2π)