

# **J.S.University**

## **Assignment For Diploma mechanical Engineering 1<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/Examiner. Assignment Submission Dates are:



Nov-19

### **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.

# **J.S. UNIVERSITY**

## **Cover page of Assignment**

ID NUMBER .....

NAME .....

COURSE .....

STREAM .....

SEMESTER .....

SUBJECT CODE .....

SUBJECT NAME .....

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

# **Subject Name**

**Communication Skills**

**Applied Mathematics**

**Applied Physics**

**Applied Chemistry**

**Engineering Drawing**

## DEME-101

### Communication Skills

#### Part A

1. What is professionalism ? Define with an example ?
2. What are different barriers to communications ?
3. What are psychological barriers ?
4. What is premature Evaluation ?
5. What are the seven Cs of Professionalism?

#### Part B

1. What are the ways by which we can remove noise in the communication ?
2. What are the different ways by which we can reduce our hesitation of speaking?

## DEME-102

### [Applied MATHEMATICS]

#### Part A

1. Resolve  $\frac{1}{(x+1)(x+2)}$  into partial fraction.
2. Show that  $\cot 2x \cot x - \cot 3x \cot 2x - \cot 3x \cot x = 1$
3. Expand the Determinant  $\begin{vmatrix} 2 & 3 & 1 \\ 6 & 4 & 8 \\ 2 & 5 & 6 \end{vmatrix}$
4. Find  $\sin^2 \frac{\pi}{3} + \cos^2 \frac{\pi}{6} + \tan \frac{\pi}{4}$
5. Expand  $(2x + 5)^5$  by the Binomial Theorem

#### Part B

1. Find inverse of matrix  $\begin{vmatrix} 3 & 1 & 5 \\ 2 & 3 & 4 \\ 5 & 1 & 2 \end{vmatrix}$
2. How many different words can we make using the letters A, B, E and L ?

**DEME-103**  
**[Basics of Information Technology]**  
**Part (A)**

1. Explain about Block Diagram of Computer and also draw the Figure.
2. Difference between DOS and Windows Operating System.
3. Difference between EPROM and EEPROM.
4. Explain about Generation of computer.
5. Explain about LAN, MAN, WAN

**Part (B)**

1.  $(DCE)_{16} \xrightarrow{\hspace{1.5cm}} (\hspace{1.5cm})_8$
2. (a)  $10010110 \times 1001 = \dots\dots\dots$   
(b)  $(25.625)_{10} \xrightarrow{\hspace{1.5cm}} (\hspace{1.5cm})_2$

**DEME-104**  
**[Applied Physics]**

**Part A**

1. What is dopplers effect? Deduce the expression of apparent frequency of sound for the relative motion between the source and observer.
2. Derive an expression of energy of plane progressive sound wave of sure form and hence obtain the expression for energy current (i.e., intensity of sound waves).
3. Differentiate between longitudinal and transverse waves. How are these produced.
4. What do you understand by superposition of waves ? Under what conditions the stationary waves, beats are interference are produced.
5. State the characteristics of a plane progressive waves. Deduce the expression of simple harmonic.

**Part B**

1. Explain systematic and random errors with the help of an example.
2. What do you mean by dimension of physical quantity? Give the dimensions and units of energy,

**DEME-105**  
**[Applied Chemistry]**  
**Part A**

1. What are quantum numbers and types of quantum numbers.
2. What is the difference between an orbit and an orbital's ? What do you know about p-orbital ? describe in brief.
3. Write a note on de-Broglie's equation.
4. State Pauli's exclusion principle.
5. Write the electronic configurations of atom cr, cu, zn, Fe, Na ca al, cl.

**Part B**

1. What is Electrochemical cell? Explain with example of Daniell cell
2. What are polymers and types of polymers?

**DEME-106**  
**[ ENGINEERING DRAWING – I]**  
**Part A**

1. By a line diagram, indicate the "TYPES OF SOLIDS" which are commonly used in Engineering drawing.
2. Explain with the help of sketches the progressive and chain type of dimensioning arrangements.
3. Calculate the DEVELOPED LENGTH of a cylindrical shape, having base dia. 49 mm.
4. Write down the various conditions of any straight line with respect to the reference planes i.e. H.P. and V.P.
5. Construct an equilateral triangle when the altitude is given as 60 mm.

**Part B**

1. Define Isometric scale and explain how it is constructed.
2. (a) What do you understand by R.F. (Representation Fraction) ?  
(b) Define "Regular Polygon".

