SAI NATH UNIVERSITY

ASSIGNMENT FOR DIPLOMA IN ELECTRICAL 6 TH SEM.

The Assignment will consist of two parts, A and B. Part A will have 5 short answer questions(40-60words) 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-19

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.

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SUBJECT LIST

SUBJECT NAME
APPLIED MATHEMATICS – II
APPLIED PHYSICS-II
APPLIED CHEMISTRY-II
APPLIED MECHANICS
ENGINEERING DRAWING – II
GENERAL WORKSHOP PRACTICE –II
COMMUNICATION SKILLS-II

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Cover page of Assignment

ID NUMBER ……

NAME ……

COURSE ……..

STREAM …….

SEM 2 ND ……

SUBJECT CODE ……

SUBJECT NAME ……

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

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SUB-APPLIED MATHEMATICS – II

PART-A

Q.1 A particle moving in a straight line has a velocity **v cm/sec** at time t sec where $\mathbf{v = 5 - 4t + 3t^2}$. Find its displacement at 3 sec and the acceleration at that time.

Q.2 Find the area enclosed between the curve $y^2 = x^2(4 - x^2)$, the co-ordinate axes and the ordinate x = 2.

Q.3 Prove that $\mathbf{\sec^2\omega - \operatorname{cosec}^2\omega >= 4}$

Q.4 If **tan(A+B) =P , tan(A-B)=Q** than show that **tan2A=(p+q)/(1-pq)**

Q.5 If $\mathbf{\cos(\alpha+\beta) = \frac{4}{5}}$ and $\mathbf{\sin(\alpha-\beta) = \frac{5}{13}}$ and **α,β** lie between **0** and **π/4** , prove that

$\mathbf{\tan 2\alpha = \frac{56}{33}}$.

PART-B

Q.1 If the equation of the two diameter of a circle are x-y=5 and 2x+y=4 ,the radius of the circle is 5 , find the equation of circle.

Q.2 **C**ompute the arithmetic mean and median of the following data :

Income	Under 1	1-2	2-3	3-5	5-10	10-25	25-50	50-100	100-1000
No of Persons	13	90	81	117	66	27	6	2	2

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SUB- APPLIED PHYSICS-II

PART-A

Ques-1 What is mirror formula? Define magnification and explain why magnification of a convex mirror is always negative.

Ques-2 Distinguish between diamagnetic, paramagnetic, ferromagnetic materials.

Ques-3 What are the differences between EMF and potential difference of a cell?

Ques-4 State Lenz's laws in electromagnetic induction.

Ques-5 Derive an expression for the drift velocity of electrons in a conductor.

PART-B

Ques-1 State and prove Gauss law. Describe the working of Wheat stone bridge.

Ques-2 Write short notes on any four of the following :

(a) Equation of continuity 4x31/2=14

(b) Critical velocity

(c) Stefan's law

(d) Laws of Refraction

(e) Power of a Lens

(f) Potentiometer

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SUB-APPLIED CHEMISTRY-II

PART-A

Ques-1 Differentiate between an orbit and orbital.

Ques-2 What are electrolytes and non-electrolytes?

Ques-3 Define chemical bond. What is the cause of chemical combination?

Ques-4 What are the advantages of long form of periodic table?

Ques-5 How will you define indicator, titration and end point?

PART-B

Ques-1 a) Name and explain the quantum numbers.

b) Explain the process of electroplating?

Ques-2. a) Explain molarity, normality and molality.

b) Write a short note on aufbau principle and hund's rule

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SUB-APPLIED MECHANICS

PART-A

Ques-1 What do mean by force? Explain Force system.

Ques-2 Define triangle law of forces and lami`s theorem.

Ques-3 Establish a relation between efficiency, mechanical advantage and velocity ratio of a machine.

Ques-4 Where the C.G. does lies of sphere, circular cone, and right circular cylinder?

PART-B

Ques-1 Find centroid of I section whose dimensions are

Top flange = 10cm x 2.5cm

Web = 10cm x 2.5cm

Bottom flange = 15cm x 2.5cm

Ques-2 . Coefficient of friction between a body of weight 200N and horizontal plane on which it rests is 0.35

a) Calculate horizontal surface which acting upon the body just cause it to slide.

b) If body is loaded with additional weight of 150N, calculate the least horizontal force which causes the body to slide.

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SUB- ENGINEERING DRAWING – II

PART-A

Ques-1 Draw a plain scale to show metres and decimeters when 1 metre is represented by 2.5 centimetres. The scale should be long enough to measure upto 5 metres. Mark a distance of 4 metres and 3 decimeters on the scale.

Ques-2 What is the difference between third angle and first angle projection?

Ques-3 A point L is placed in first Quadrant. It is 60 mm above H.P. and 20 mm in front of V.P. draw its projections.

Ques-4 What is RF and how it is calculated? What are Plain Scales?

PART-B

Ques-1 Write the following sentence in free hand taking the height of letter as 8 mm.

INDIA IS A SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC

Ques-2 Draw the conventional representation/symbol for any five of the following:
Hidden Line, Dimension Line, Short Break Line, Lead, Steel, Wood.

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SUB- GENERAL WORKSHOP PRACTICE –II

PART-A

Ques-1 Write short note on the following.

i. Laser beam welding with the help of neat sketch. What are the applications of laser beam welding?
ii. ii. Ultrasonic welding and its applications.

Ques-2. Discuss the principle, working and application of die casting.

Ques-3 Write short note on the following.

a) Submerged arc welding

b) Flux shielded arc welding

Ques-4 What do you understand by wire drawing and how does it differ from Extrusion?

PART-B

Ques-1 . What do you mean by pattern? Why patterns are used? Explain their functions.

Ques-2 Explain the different types of defects in welded joints.

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COMMUNICATION SKILLS-II

Q1- Write a dialogue, in about 20 turns, between two friends discussing what they would like to do in their lives after completing their education.

Q2- Select a company you would like to work for and a position you would like to have within that company. Write an application letter in which you explain your qualifications and request an interview. (You should assume that you have graduated, or that you will graduate soon.) Send your CV along with the cover letter.

Q3-You recently moved to a new city on a job transfer. Write an email to your friend informing him of this move. In your email:

i. Describe the new city .

ii Explain how life in this city is different compared to the previous city.

iii Invite your friend and family to visit you in the new city .

iv Say what your new job profile is.

Q4- Complete the following company profile with either the present perfect or past simple tense of the verbs in brackets:

William Colgate…….(found) the Colgate Company in 1806 as a starch, soap and candle business in New York City. For the first one hundred years, the company…….(do) all its business in the United States. However, in the early 1900s, the company…….(begin) an aggressive expansion programme that …….((lead) to the establishment of Colgate operations in countries throughout Europe, Latin America and the Far East. Recently it…….(set up) operations in Turkey, Pakistan, Saudi Arabia, Eastern Europe and China. Colgate-Palmolive …….(become) a truly global consumer products company, worth $6.6 billion and selling in more than 160 countries.

Colgate-Palmolive's five main sectors of business are: Oral Care, Body Care, Household Surface Care, Fabric Care and Pet Nutrition and Health Care. In the area of Oral Care, Colgate-Palmolive is the world leader in toothpaste. Since 1980, the company …….(increase) its share of this market by more than 12% to over 40% today. Oral care revenues ……..(grow) significantly in recent years and in 1991, they ……..(exceed) $1.3 billion. As a result of the company's heavy investment in research and technology, it……(develop) many successful toothpaste, rinses and toothbrushes