SARASWATI Education Society's

SARASWATI Institute of Technology

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Kharghar, Navi Mumbai - 410 210.

Science & Humanities Department

Name of Programme: - ME and CE

Name of Course: - Applied Physics (SEM-II 2017-18)

Course Outcome: Select relevant material in industry by analyzing its physical properties.

Unit I : Properties of Matter and NDT

Assignment –I

1. Out of following three materials Steel, Copper and Rubber which is more elastic and why?

2. What are the factors affecting on elasticity or its applications?

3. What are the Applications of Young's Modulus of Elasticity?

4. What is NDT? State its advantages.

5. Name any four NDT Methods used in Industry?

6. State various factors on which selection of NDT Method depends.

7. State criteria to select NDT Method.

8. State Merits and Demerits of NDT Method.

9. What is Archimedes's Principle? What are its Examples and Applications?

10. What is Pascal Law? What are its Examples and Applications?

11. What is Viscosity and write the examples of low viscosity and high viscosity of fluid (Liquid)

12. Compare the High Viscous density and Low Viscous density of fluid.

Last Date Of submission: 21/02/2018

Name of course coordinator: Kiran Shinde

Science & Humanities Department

Name of Programme: - ME and CE

Name of Course: - Applied Physics (SEM-II 2017-18)

Course Outcome - Apply Laws of Motion in various Applications.

Unit II : Types of Motion Assignment –II

1. What is Momentum. State its S.I unit.
2. What is Newton's First, Second and Third Law of Motion? What are its Examples and Applications?
3. A cat starts from rest and accelerates uniformly to a speed of 72km/hr over a distance of 500m. A further acceleration raises the speed to 90km/hr in 10 seconds. The brakes are now applied to bring the car to rest under uniform retardation in 5 seconds. Find distance travelled during breaking.
(a)200m (b) 300m (c) 225m (d) 335m
4. Calculate Angular velocity of Earth about her own axis.
5. Calculate Angular velocity of a second hand of a clock.
6. The second hand of a clock is 6 cm long. Calculate the linear speed of ant sitting at the tip.
7. Newton meter is the S.I. Unit of _____
8. KWh is the unit of _____
9. S.I unit for Work done is _____
10. Energy is _____
11. Power is defined as _____
12. Potential Energy & Kinetic Energy are types of _____
13. S.I unit of energy is _____
14. Action and reaction act on _____
15. S.I unit of impulse is _____
16. What is the total momentum of a bullet and gun before firing _____
17. P = m x v Where P is _____
18. Momentum of a body in uniform motion is _____
19. Rate of change of momentum is _____
20. S.I unit of momentum is _____
21. Name the principle on which rocket works? _____
22. Force attraction or repulsion between two magnets obeys _____
23. Range of projectile will be minimum if angle of projectile is _____
24. Range of projectile will be maximum if angle of projectile is _____
25. In projectile motion the acceleration in horizontal direction _____
26. The path described by a projectile represents a _____
27. The Parabolic motion of a body is called _____
28. A player making a long jump is an example of _____
29. Define Time of flight. State it's Formula with meanings of symbols
30. State the Formula of Height of projectile and Range of projectile with meanings of symbols.

Last Date Of submission: 23/02/2018

Name of Course Coordinator: Kiran Shinde

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Science & Humanities Department

Name of Programme: - ME and CE

Name of Course: - Applied Physics (SEM-II 2017-18)

Course Outcome: Use LASERs, X-Rays and Photoelectric Sensors

Assignment –III

1. According to Einstein the energy E = _____
2. Important property of photon is _____
3. Relation between Energy and Momentum of a photon is _____
4. The energy of photon is _____ proportional to frequency and _____ proportional to wavelength.
5. One photon can eject _____ photoelectron.
6. Stopping potential is _____
7. Photoelectric Cell is a device which converts to _____
8. LDR uses principle of _____
9. The resistance of the LDR will with increase in the intensity of incident light _____
10. LDR is used in _____
    (a)Camera exposure control (b)Night Light control (c) Photocopy machines (d)All of these
11. Typical value of Dark Resistance is _____ (a) Few100 ohm (b) Few100 kilo ohm (c) 1000 kilo ohm
12. X-Ray tube contains_____
13. A cathode in X-Ray tube consists of _____ filament.
14. What are X-Rays? Explain the properties and applications of X-Rays.
15. What is full form of LASER?
16. What are Characteristics (Properties) of LASER.
17. LASER Light has _____ Spectrum band width.
18. For the production of LASER Light _____ emission should dominate.
19. Sate True or False. Laser Light has excellent stability.
20. Distinguish between Ordinary Light and Laser Light.

Last Date Of submission: ----------

Name of course coordinator: Kiran Shinde

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Kharghar, Navi Mumbai - 410 210.

Science & Humanities Department

Name of Programme: - ME/CE/CO (Common For All Programme)

Name of Course: - Basic Physics (SEM-I 2017-18)

Course Outcome: To understand and estimate errors in measurement of physical quantity

TOPIC 1: UNITS AND MEASUREMENT

Assignment 1

Que.1 Write the Dimensional Formulae of following questions

1. Speed	8. Momentum
2. Acceleration	9. Impulse
3. Force	10. Area
4. Pressure	11. Volume
5. Density	12. Velocity or Speed
6. Work	13. Impulse
7. Energy	14. Power

Que.2 using the method of dimension Show That

1 joule = 10^{7} ergs

Que.3 The value of G in CGS System is 6.67×10^{-8} dynecm^{2}g^{-2}

Last Date Of submission:

Name of course coordinator: Kiran Shinde

Note: It is mandatory for all the Students.

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Science & Humanities Department

Name of Programme: - ME/CE/CO (Common For All Programme)

Name of Course: - Basic Physics (SEM-I 2017-18)

Course Outcome: Apply the principles of electricity and magnetism to solve engineering Problems

TOPIC 2: ELECTRICITY, MAGNETISM AND SEMICONDUCTORS

Assignment 2

1. State and explain Ohm's Law?
2. Define Electric Current and state its unit.
3. What is Potential and Potential Difference and state their units.
4. Why electric lines of force never intersect each other?
5. Why magnetic lines of force never intersect each other?

Last Date Of submission: Revised Submission Date: 10/10/2017

Name of course coordinator: Kiran Shinde

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Science & Humanities Department

Name of Programme: - ME/CE/CO (Common For All Programme)

Name of Course: - Basic Physics (SEM-I 2017-18)

Course Outcome: Use the basic principles of heat and optics in related engineering Applications

TOPIC 3: HEAT AND OPTICS

Assignment 3

1. What is Heat and Temperature?
2. Distinguish between Heat and Temperature.
3. How many types of Temperature Scales?
4. Write formulas for Temperature Scales OR Conversion formulas for Temperature Scales for [^{0}C,^{0}K,^{0}F]
5. What is Good Conductor, Bad Conductor and Insulator along their examples.

Last Date Of submission: Revised Submission Date: 10/10/2017

Name of course coordinator: Kiran Shinde

Note: It is mandatory for all the Students.