

SUMMER ASSIGNMENT (Session 2018-19)
CLASS-XI

SUB-CHEMISTRY

Chapter 1. Some basic concepts of Chemistry

- Express the following in scientific notation:
i) 0.0048 ii) 236,000 iii) 8008 iv) 600.0 v) 783.4
- How many significant figures are present in the following?
i) 0.0025 ii) 208 iii) 3.0034 iv) 126,000 v) 50.0
- Why do mixtures not obey the law of constant proportions.
- Define Gay Lussac's law of gaseous volumes. Explain with one suitable example.
- State and explain with example :
 - Law of Constant proportions
 - Law of Multiple proportions
 - Avogadro's Law
- Discuss the main features of Dalton's Atomic theory.
- Define Molecular and Empirical formula of a compound.
- An organo metallic compound on analysis was found to contain C=64.4% , H=5.5 % and Fe= 29.9 %. Determine its empirical formula.
(At mass of Fe= 56)
- Silicon forms a compound with chlorine in which 5.6 g of silicon is combined with 21.3g of chlorine. Calculate the empirical formula of the compound. (At mass of Si-28; Cl-35.5)
- A compound contains 42.3913 % K, 15.2173% Fe, 19.5652% C and 22.8260 % N. The molecular mass of the compound is 368u. Find the molecular formula of the compound.

Chapter 16: Environmental Chemistry

- What is 'acid rain'? How is it harmful to the environment?
- What do you mean by Green house effect? What is the role of CO₂ in the green house effect?
- What is smog? How is classical smog different from photo chemical smog?
- What are the reactions involved for ozone layer depletion in the stratosphere? What is the effect of CFCs on ozone layer ?
- What do you mean by ozone hole? What are its consequences?
- What are harmful effects of photochemical smog and how can they can be controlled? Write down the reactions involved during the formation of photochemical smog?
- .Give three examples in which green chemistry has been applied.

8. State reason why CO acts as a pollutant and considered as poisonous , although it is colourless & odourless gas?
9. What is smog? Explain the types of smog.
10. Write the main effects of depletion of ozone layer?
11. Define COD and BOD. How is it determined?
12. Comment on the statement – Green Chemistry is an alternative tool for reducing pollution.
13. What do you understand by global warming? What could be the consequences of global warming?
14. Why is acid rain considered as threat to Taj-Mahal?

Subject – Computer Science

- 1 What do you understand by python language?
2. Differentiate Low Level Language and High Level Language.
3. Python is a dynamic language .Explain with example?
4. What is IDLE?
5. What are data types?
6. What is the difference between python and other languages?
7. What is concept behind the use of python?
8. Is it possible to use oops concepts in python?
9. What is object? Why we use it?
- 10 How can we implement concept of AI with the help of python?.

Subject : English

- Q. Khushwant Singh’s grandmother was a person of strong values. Discuss.
- Q. Write a summary of the Poem : Photograph.
- Q.3 Write an article on “Mobile Phones: a modern utility or a health hazard”.

Subject - Physics
WORKSHEET (UNITS AND MEASUREMENT)
&
SUMMER ASSIGNMENT(2018)

- Q.1 Calculate the dimensional formula of energy from the equation $E = 2.1 mv^2$.
- Q.2 Kinetic energy of a particle moving along elliptical trajectory is given by $K = \alpha s^2$ where s is the distance travelled by the particle. Determine dimensions of α .
- Q.3 The distance covered by a particle in time t is given by $x = a + bt + ct^2 + dt^3$; find the dimensions of a , b , c and d .
- Q.4 Young's modulus of steel is $19 \times 10^{10} \text{ N/m}^2$. Express it in dyne/cm^2 . Here dyne is the CGS unit of force.
- Q.5 A calorie is a unit of heat or energy and it equals about 4.2 J, where $1 \text{ J} = 1 \text{ kg m}^2 / \text{s}^2$. Suppose we employ a system of unit in which unit of mass equals $\alpha \text{ kg}$, the unit of length equals β metre. Unit of time is Y sec. Show that a calorie has a magnitude $4.2 \alpha^{-1} \beta^{-2} Y^2$ in terms of new units.
- Q.6 check the dimensional correctness of the relation $v = u + at$
- Q.7 check the dimensional correctness of the relation $x = ut + \frac{1}{2} at^2$
- Q.8 find an expression for the time period t of a simple pendulum. The time period t may depend upon (i) mass m of the bob of the pendulum, (ii) length of pendulum L , (iii) acceleration due to gravity g at the place where the pendulum is suspended.
- Q.9. Does the measurement of a physical quantity depend upon the system of units used?**
- Q.10. Which physical quantities have the same dimensions of $[\text{ML}^{-1}\text{T}^{-2}]$?**
- Q.11 Suppose $A = B^n C^m$, where A has dimensions LT , B has dimensions L^2T^{-1} , and C has dimensions LT^2 . Then the exponents n and m have the values.
- Q.12 If $x = at + bt^2$ where x is the distance travelled by the body in kilometre while t the time in seconds, then find the units of b and a
- Q.13 What is a unit?
- Q.14 What is the international system of units?
- Q.15 What is meant by derived units? Give its examples.
- Q.16 What is principle of homogeneity of dimensions?
- Q.17 Write the dimensional formula of power and force.
- Q.18 What are supplementary units?

Q.19 What are the limitations of dimensional analysis?

Q.20 What are the limitations of dimensional analysis?

If a physical quantity is dependent on more than 3 variables then we cannot find the relation between them. Consider a quantity 'A' with dimensions MLT depending on variables 'm', 'n', 'o' and 'p', with dimensions L, M, T and MLT. Using dimensional analysis we can get,

Q.21 What is coherent system of unit?

Q.22 What do you mean by the dimensions of a physical quantity? What is meant by dimensional formula and equations?