**CLASS : XI**

**SUBJECT : CHEMISTRY CHAPTER: SOME BASIC CONCEPTS OF CHEMISTRY**

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| **Sr. No.** | **Knowledge Based** |  |
| 1. | Why is chemistry important to us? State some of its major use. |  |
| 2. | Define matter. How can we show that the states of matter are interconvertible? |  |
| 3 | List the seven basic physical quantities along with their SI units. |  |
| 4 | Convert the following into 0F and K scale:a)250C b) 370C c) 550C d) 950C |  |
| 5 | What are significant figures?  |  |
| 6 | State the different laws of chemical combinations. |  |
| 7 | Hydrogen catches fire easily and oxygen helps in combustion. Why is water used for extinguishing fire? |  |
| 8 | What is the difference between molarity and molality? |  |
| 9 | What is limiting reagent? |  |
| **S. No.** | **Understanding Based** |  |
| 10 | Give three examples of homogenous and heterogenous mixture from daily life. |  |
| 11 | How are elements different from compounds? |  |
| 12 | Why was the need of a common standard system being felt by the scientific community? |  |
| 13 | How does uncertainty arise in measurement? |  |
| 14 | When do zeros present in a number become insignificant? |  |
| 15 | State the number of significant figures in the following numbers:1. 62.4 b)0.0405 c) 8.8674 d)8.8674 d)50.0
 |  |
| 16 | Which law correlates the mass and volume of a gas? |  |
| 17 | What is the basic difference between empirical and molecular formula? |  |
| 18 | What is the effect of temperature on molarity of a solution? |  |
| 19 | How many millilitres of 0.5M H2SO4 are needed to dissolve 0.5g of copper(II) carbonate? (A: 8.1ml) |  |
| 20 | Calculate the density of a 3.60M H2SO4  solution that is 29% H2SO4  by mass. (A: 1.22g/ml)  |  |
| 21 | In the combustion of methane, why is methane regarded as the limiting reagent? |  |
| 22 | Calculate the molarity of NaOH in the solution prepared by dissolving its 6g in enough water to make 250ml of the solution. |  |
| 23 | Calculate the number of atoms present in 1.4g of N2 molecule? (A: 6.023\*1022 atoms) |  |
| **S. No.** | **Application** |  |
| 24 | How are mass and weight different? |  |
| 25 | Why do we regard the gaseous state of water as vapours while that of ammonia as gas? (Hint: state of ammonia and water at rt) |  |
| 26 | For an actual result of an observation to be 5, two students A and B reported their readings as follows:

|  |  |  |
| --- | --- | --- |
|  | Observation number | Average  |
|  | 1 | 2 |  |
| Student A | 4.95 | 4.93 | 4.94 |
| Student B | 4.94 | 5.05 | 4.995 |
|  |  |  |  |

 Which of the student has made a more precise observation? Is his observation accurate too ?  |  |
| 27 | When is the law of definite proportions not obeyed? |  |
| 28 | How many oxygen atoms are present in 96g of ozone?(A: 9.612\*1023) |  |
| 29 | Which law of chemical combination is not obeyed by Daltons atomic theory? |  |
| 30 | 1M solution of NaNO3 has density 1.25g/cm3 .calculate its molality. (A:0.858m) |  |
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| **S.No.** | **Value Based** |  |
| 31 | Cancer is a silent killer. Rakesh’s father, Mr.Prakash is suffering from lung cancer. It can be treated by drugs like cisplatin and taxol. If detected at early stage, its curable. Mr.Prakash is a chain smoker, whereas Monika’s father, Mr.Ram does not smoke at all. Hw tries to convince others not to smoke.1. What is the main cause of lung cancer?
2. What is meant by chemotherapy?
3. What values are possessed by Mr,Ram?
4. Why should we avoid sitting near the people who smoke?
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| 32 | A student collected three samples of water from different sources and found out the %age of H and O by mass in these samples. It should have been 1:8 by mass. But it was different in all the samples. Moreover the values didn’t match.1. Why did the student get different results in each sample?
2. What should have been done by him?
3. Which law of chemical combination is supported by these observations?
4. How will you test the purity of water in the laboratory?
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| **S.No.** | **HOTS** |  |
| 33 | Are 0.5 mole of NaOH and 0.5M NaOH same? Give reasons. |  |
| 34 | Out of 1M H2SO4 and 1N H2SO4, which is more concentrated and why? |  |
| 35 | We breathe in fresh air in the morning walk, is it pure as well? |  |