

APPLIED CHEMISTRY-I
1st/2555/0451/5404/Common/May'16

Duration: 3hrs

M. Marks=75

SECTION- A

Q1 (A) Fill in the blanks

1x8= 8

- i. Dimensional formula of pressure is
- ii. Cations are thecharged ions.
- iii. The shape of s-orbital is.....
- iv. Sigma bond isthan pi bond.
- v. Positively charged ions are called.....
- vi. Bond length is measured in Unit
- vii. Negatively charged ion are called
- viii. The functional group of ketone is.....

(B) State true or false

1x7=7

- i. Vertical columns are called periods
- ii. Molecule of C₂H₂ is linear
- iii. Blood is a buffer solution.
- iv. Isotopes have same number of protons.
- v. Gunpowder is a mixture.
- vi. Silver nitrate is a non electrolyte.
- vii. All orbitals have directional characteristics.

SECTION- B

Q.2. Attempt any TEN questions.

3x10=30

- i. Define sigma (σ) and pi (π) bonding .
- ii. Differentiate between an orbit and an orbital?
- iii. What are the essentials of chemical equation?
- iv. Write the shortcomings of Bohr's model of an atom?
- v. Define Boyle's law and Charles law?
- vi. What are the causes and disadvantages of boiler corrosion?
- vii. Explain working of primary cell?
- viii. Explain functional group?
- ix. Explain strong and weak electrolyte?
- x. Give advantages of long form of the periodic table?
- xi. Calculate the number of atoms in 23gm of Na ? (at.mass of Na=23)
- xii. Explain ionic bond. Give example?
- xiii. Explain periods and groups briefly.

SECTION- C

Q.3 Attempt any THREE questions.

10x3=30

1. a) Name and explain the quantum numbers. 5
 b) Explain the process of electroplating? 5
2. a) Explain molarity, normality and molality. 5
 b) Write a short note on Aufbau principle and Hund's rule 5
3. a) Differentiate between alkene and alkyne. 3
 b) Differentiate between s and p orbital. 2
 c) Balance the following equation by hit and trial method
 $\text{KClO}_3 \rightarrow \text{KCl} + \text{O}_2$ 5
4. a) Write the formula of the following compound. 5
 i. Acetic acid ii. Acetaldehyde iii. Acetone iv. Ethene v. Ethyne
 b) Calculate the pH value of 0.01 HCl? 3
 c) What are the causes of hardness of water? 2
5. a) Define a coordinate bond. Explain it taking at least 2 examples? 5
 b) Describe sp, sp², sp³ hybridisation. 5