

Class:- 11

Time:- 1 Hour

Roll:

Name of the student:

Subject:- Chemistry

Total :- 25 Marks

Sec:

General instructions

- a. There are 16 questions in this question paper with internal choice.
- b. SECTION A consists of 11 multiple choice questions carrying 1 mark each.
- c. SECTION B consists of 3 very short answer questions carrying 2 marks each.
- d. SECTION C consists of 1 short answer questions carrying 3 marks.
- e. SECTION D consists of 1 case study questions carrying 5 marks.
- f. **All questions are compulsory.**

SECTION A (1X11=11)

1. Avogadro number is the number of molecule present in
 - a) 1 lit of any gas at NTP
 - b) 10 lit of gas at NTP
 - c) 11.2 lit of any gas at NTP
 - d) 22.4 lit of any gas at NTP.
2. Which gas law relates the volume of a gas to the number of molecules of the gas?
 - a) Gay -Lussac's law
 - b) Avogadro law
 - c) Boyle's law
 - d) Charle's law.
3. What is the atomic mass (u) of chlorine
 - a) 34
 - b) 35.5
 - c) 33
 - d) 35
4. The number of protons, neutrons and electrons in $^{175}\text{Lu}_{71}$ respectively are
 - a) 104,71 and 71
 - b) 71,71 and 104
 - c) 175,104 and 71
 - d) 71,104 and 71
5. What would be the radius of second orbit of He^+ ion?
 - a) 1.058 A^0
 - b) 3.023 A^0
 - c) 2.068 A^0
 - d) 4.458 A^0
6. When the 3d orbital is complete the new electron will enter in
 - a) 4p orbital
 - b) 4f orbital
 - c) 4s orbital
 - d) 4d orbital
7. Propanal and propanone are
 - a) Stereoisomers
 - b) Position isomers
 - c) Chain isomers
 - d) Functional group isomers.
8. Covalent bonds are formed with other carbon atoms due to
 - a) Catenation
 - b) Substitution
 - c) Ionisation
 - d) Coordination.
9. The molecular formula $\text{C}_3\text{H}_8\text{O}$ represents two alcohols: propan-1-ol and propan-2-ol. This property is called as:
 - a) Metamerism
 - b) Position isomerism
 - c) Functional group isomerism
 - d) Chain isomerism

Directions: These questions consist of two statements, each printed as Assertion and Reason. While answering these questions, you are required to choose any one of the following four responses.

- (a) If both Assertion and Reason are correct and the Reason is a correct explanation of the Assertion.
- (b) If both Assertion and Reason are correct but Reason is not a correct explanation of the Assertion.
- (c) If the Assertion is correct but Reason is incorrect.
- (d) If both the Assertion and Reason are incorrect.

10. Assertion : The standard unit of expressing mass of atoms is called “u”

Reason: “u” represents unit mass.

11. Assertion : Violet colour is the most deviated one.

Reason: the shorter is the wave-length the greater is the deviation.

SECTION B (2X3=6)

12. Explain law of definite proportion with an example.

13. Write the observation of Rutherford gold foil experiment.

14. Write the structure of the following compound

i. Aniline

ii. Anisole

SECTION C (3X1=3)

15. a) Using s,p,d,f notations describe the orbital with the following quantum numbers

i. $n=2, l=1$

ii. $n=4, l=0$

iii. $n=5, l=3$

iv. $n=3, l=2$

b) What is the total number of orbitals associated with the principal quantum number $n=3$?

(0.5X4+1)

OR

i. Calculate the amount of water produced by the combustion of 16g of methane.

ii. How many significant figures are present in 0.0025?

(2+1)

SECTION D (5X1=5)

16. i. Give example of the following:

a. Chain isomerism

b. Position isomerism

c. Functional group isomerism.

ii. Write bond line formula of

a. iso pentane

b. neo pentane.

(3+2)

OR

i. an atomic orbital has $n=3$. What are the possible values of l and m_l ?

ii. List the quantum numbers (m_l and l) of electrons for 3d orbital

iii. Which of the following orbitals are possible?

1p, 2s, 2p and 3f.

(2+2+1)