CBSE Class 11 Chemistry Sample Paper Set 2

Time allowed: 3 Hours **Max. Marks: 70**

Section-A (1 mark each)

General Instructions:

(a) All questions are compulsory
(b) Section A: Q.no. 1 to 5 are very short questions and carry 1 mark each.
(c) Section B: Q. no. 6 to 12 are short answer questions and carry 2 marks each.
(d) Section C: Q. no. 13 to 24 are also short answer questions and carry 3 marks each.
(e) Section D: Q. no. 25 to 27 are long answer questions and carry 5 marks each.
(f) There is no0 overall choice. However an internal choice has been provided in two questions of one mark, two questions of two marks, four questions of three marks and all the three questions of five marks weightage. You have to attempt only one of the choices in such questions.
(g) Use of log tables if necessary, use of calculators is not allowed.

Section-A (1 mark each)

Q1. What is the mass of a proton in amu?

OR

What is S.I unit of luminous intensity?

Q2. Bohrium has atomic no 107. Write its IUPAC name?

Q3. Mention the geometry of the following molecule?

OR

Name the region of electromagnetic spectrum to which the Balmer series of hydrogen belongs to?

Q4. Which method can be used to remove both temporary and permanent hardness of water?

Q5. Give principle used in the distillation technique.

Section-B (2 marks each)

Q6. Naturally occurring boron consists of two isotopes whose atomic weights are 10.01 and 11.01. The atomic weight of natural boron is 10.81. Calculate the percentage of each isotope in natural boron?

OR

What is meant by emission spectrum?

Q7. Arrange the following in the given order:

(a) Decreasing ionic size: Mg^{2+}, O_2^{2-}, Na^+, F^-
(b) Increasing first ionization energy: Mg, Al, Si, Na
(c) Increasing bond length: F_2, N_2, Cl_2, O_2
(d) The order of their increasing size: Cl^-, S^{2-}, Ca^{2+}, Al^{3+}

OR

What is water gas? Give the method to prepare it.

Q8. Arrange the following:

(i) Increasing order of ionic radii: Li^+, Na^+, K^+, Rb^+, Cs^+
(ii) Decreasing order of hydration energy: Li^+, Na^+, K^+, Rb^+, Cs^+

Q9. Give the hybridisation for the following geometry of the planar and linear molecules.

Q10. Give two physical properties of acetylene.

Ans. (i) Lighter than water.
(ii) They are colourless.

Q11. Give two methods for preparation of benzene.

Q12. Give chemical formula for Gammaxene. Also give a method for its preparation.

Section-C (3 marks each)

Q13. Give the bond order, stability and magnetic nature of O_2 and O_2^+.

Q14. Convert following to (i) Acetylene to benzene (ii) Benzene to Benzoic acid (iii) Hexane to Benzene.

Q15. Give three causes of water pollution.

Q16. What is ozone hole? Discuss its consequences.

OR

(a) What explanation is given by Bohr atomic model?
(b) What does magnetic quantum number specifies?
(c) Give the total number of orbitals in a shell with principal quantum number as n.

Q17. Give three factors affecting Electron gain enthalpy.

Q18. Give three differences between metals and non-metals.

Q19. Why lanthanides and actinides are placed in separate rows at the bottom of the periodic table.

OR

Q (a) Which gas is responsible for the Bhopal tragedy?
(b) Which compound is formed when CO combines with blood?
(c) Give chemicals which leads to ozone hole.

Q20. (a)Define bond order.
(b) Give bond order in CO.
(c) How bond order is related to stability of the molecule.

OR

Give three properties of ionic compounds.

Q21. Write three properties of anode rays.

Q22. Give three limitations of Bohr's Model.

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OR

Give S.I. units of (a) Length, (b) Density and (c) Mass.

Q23. What is antimarkownikov rule? Give an example.

Q24. Write three postulates of Kinetic Molecular Theory of Gases.

Section-D (5 marks each)

Q25. Discuss applications of equilibrium constants.

OR

Discuss various techniques for purification of organic compounds.

Q26. Give five differences between sigma and pi bond.

OR

Discuss Le Chateliers Principle. Give Factors affecting the equilibria.

Q27. (a) What will be the change in the ionic product of water if acid is added to it?

OR

(a) Give isotopes of hydrogen.
(b) Give physical properties of hydrogen.
(c) Give chemical properties of hydrogen.