D 93804 (Pages : 2) Name.....

Reg. No.....

FIRST SEMESTER B.A./B.Sc. DEGREE EXAMINATION NOVEMBER 2020

(CUCBCSS)

Chemistry

CHE 1C 01—GENERAL CHEMISTRY

Time : Three Hours Maximum : 64 Marks

Section A (One Word)

Answer **all** *questions.*
Each question carries 1 *mark.*

1. What is the shape of XeF_2 ?
2. Covalent radius of hydrogen atom is ————.
3. P subshell can have ———— possible orientation.
4. Number of moles of solute dissolved per litre of solution is called ————.
5. Heavy water acts as ———— in nuclear reactions.
6. What is the % of activity that remains after 4 years, if the half life of cobalt 60 is 5.26 year.
7. The phenomenon of radioactivity was discovered by ————.
8. Which indicator is used for the titration of weak acid against strong base ?
9. Solubility of $PbCl_2$ in water can be reduced by the addition of ————.
10. ———— is used as an indicator in complexo-metric titration.

(10 × 1 = 10 marks)

Section B (Short Answers)

Answer any **seven** *questions.*
Each question carries 2 *marks.*

11. What is equivalent mass ?
12. Write a note on Lewis acid-base concept.
13. Write the differences between accuracy and precision.
14. Define common ion effect.
15. What are isotones ? Give one example.
16. What is LCAO ?

17. Write the principle of atomic bomb.
18. Explain rock dating with example.
19. How oxygen is transported in human body ?
20. What is the role of zinc in human body ?

(7 × 2 = 14 marks)

Section C (Paragraph)

Answer any **four** *questions.*
Each question carries 5 *marks.*

21. Explain Pauling scale of electro-negativity.
22. State and explain modern periodic law.
23. Differentiate between Aufbau principle and Paulis exclusion principle.
24. Write the theory of volumetric analysis.
25. Explain sp^3d^2 and sp^3d^3 hybridisation with example.
26. How N/P ratio is related to nuclear stability ?

(4 × 5 = 20 marks)

Section D (Essays)

Answer any **two** *questions.*
Each question carries 10 *marks.*

27. Explain the terms : (i) Ionisation enthalpy ; (ii) Electron affinity ; (iii) Electronegativity ; (iv) Mole fraction.
28. Give an account of : (i) Microanalysis ; (ii) Complexo-metric titration ; (iii) Indicators ; and (iv) Redox titration.
29. Draw the MO level diagram of N2 and CO and explain their properties.
30. Explain the principle and working of nuclear reactors.

(2 × 10 = 20 marks)