

(10 × 1 = 10 Marks)

10. The hybridization of carbon in diamond is _____
 9. What is global warming potential of CO₂?
 8. Among group 2 elements _____ will not directly react with hydrogen.
 7. Give an example for ammono acid and ammono base.
 6. The alkaline earth metal with highest first IE is _____
 5. The radioactive isotope of hydrogen is _____
 4. 1s orbital has _____ nodes.
 3. Solvents which can donate as well as accept a proton are referred to as _____ solvents.
 2. Give two examples of biodegradable plastics.
 1. Rutherford's model of atom was modified by N. Bohr by applying _____
- (Answer all questions in one word/one sentence. Each question carries 1 mark)

SECTION - A

Max. Marks : 80

Time : 3 Hours

(2020 Admission Onwards)

CH 1141 — INORGANIC CHEMISTRY - I

Core Course I

Chemistry

First Degree Programme under CBCSS

First Semester B.Sc. Degree Examination, June 2022

Name :

Reg. No. :

SECTION – B

Answer any eight questions. Each question carries 2 marks.

11. State and explain de Broglie relation.
12. The first IE of Be is greater than that of Li. But the case is reversed in the case of second IE. Give reason.
13. Define Lux-Flood concept of acids and bases with examples.
14. What is greenhouse effect? Name two greenhouse gases.
15. How does the electropositive character vary among the alkaline earth metals? Justify the variation.
16. Mention any two adverse effects of plastic materials to soil.
17. Graphite is used as a dry lubricant in machines. Why?
18. Give any two applications of HSAB principle.
19. Write the time independent Schrodinger equation and explain the terms.
20. State and explain Aufbau principle. Write Aufbau order of energy levels.
21. Distinguish between persistent and non-persistent pollutants with examples.
22. Distinguish between an orbit and an orbital.
23. Which is more stable in aqueous solution? Tl^+ or Tl^{3+} . Justify your answer.
24. How do industrial effluents pollute water?
25. Arrange $HClO$, $HClO_2$, $HClO_3$, $HClO_4$ in the increasing the order of acidic strength. Give reason.
26. Explain the high conductivity exhibited by a solution of an alkali metal in liquid ammonia.

(8 × 2 = 16 Marks)

5+5+5

- (c) Lewis concept of acids and bases and their limitations.
 (b) Lowry Bronsted concept and
 (a) Arrhenius concept,

39. Discuss briefly :

Answer any two questions. Each question carries 15 marks.

SECTION - D

(6 × 4 = 24 Marks)

38. What are Quantum Number?
 37. What is Smog? Explain the adverse effects caused by Smog?
 36. Discuss the impacts of stratospheric ozone depletion.
 35. What is meant by eutrophication? What are its adverse consequences?
 34. Write a note on allotropes of sulphur.
 33. Explain the note of Se in Xerography.
 32. Write a short note on the Plachimada movement.
 31. Discuss the anomalous behaviour of Be among alkaline earth metals.
 30. Explain the extra stability associated with half filled and completely filled electronic configurations.
 29. Differentiate between levelling solvents and differentiating solvents with example.
 28. Distinguish between matter waves and electromagnetic waves.
 27. Discuss the Hund's rule of maximum multiplicity with a suitable illustrative example.
- Answer any six questions. Each question carries 4 marks.

SECTION - C

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40. Explain the water quality parameters represented by DO, ROD, COD in detail. 5+5+5
41. Briefly discuss the reactions in liquid HF. 15
42. Describe :
(a) Rutherford model of atom and its limitations.
(b) Bohr theory of atom and its limitations. 7.5 + 7.5
43. Discuss the term plastic pollution, the associated adverse effects and its control measures. 5+5+5
44. Briefly discuss :
(a) About different scales of electronegativity.
(b) Diagonal relationship with a suitable example. 10+5
- (2 × 15 = 30 Marks)