

Reg. No. :

Name :

Fifth Semester B.Sc. Degree Examination, December 2022

First Degree Programme under CBCSS

Chemistry

Open Course I

CH 1551.1 : ESSENTIALS OF CHEMISTRY

(2018 and 2019 Admission)

Time : 3 Hours

Max. Marks : 80

SECTION – A

(Answer all questions. Each question carries 1 mark)

1. Give an example for a fat soluble vitamin.
2. Name the disease caused by the deficiency of vitamin A.
3. Give an example for an elastomer.
4. What is the half-life period of C^{14} isotope?
5. Write the ground state orbital electronic configuration of nitrogen atom.
6. What is fly ash?
7. Which orbital has the quantum numbers $n = 3$ and $l = 2$?
8. Which region of the atmosphere reflects radio waves?

9. What is the monomer of Teflon?
10. What is the chemical name of gun cotton?

(10 × 1 = 10 Marks)

SECTION – B

(Answer any eight questions. Each question carries 2 marks)

11. Define the term BOD.
12. What are hormones?
13. What is vulcanization of rubber?
14. Distinguish between detergents and soaps.
15. What is meant by half-life period of a radio isotope?
16. What are antipyretics?
17. What are the important uses of teflon?
18. Distinguish between orbit and orbital.
19. What are the different units of radioactivity?
20. State and explain Pauli's exclusion principle.
21. What are isotopes? Give an example.
22. Define electron affinity.
23. What are the functions of vitamin K?
24. What are the heterocyclic bases present in RNA?
25. What is acid rain?
26. Define mass defect.

(8 × 2 = 16 Marks)

SECTION – C

(Answer **any six** questions. Each question carries **4** marks)

27. Calculate age of uranium mineral that contains 15% w/w ^{206}Pb . Half-life of ^{238}U is 4.5×10^9 y.
28. Write a note on soil pollution.
29. Explain any two methods for the removal of permanent hardness of water.
30. What is synthetic rubber? What are its applications?
31. Explain the formation of ozone layer and its depletion in stratosphere.
32. What are sex hormones? Explain their functions.
33. Discuss Hund's rule with suitable examples.
34. What are particulates? How they are classified? What are their adverse effects?
35. Distinguish between fiber, plastics and elastomers.
36. Explain the biological role of nucleic acids.
37. Explain the term agricultural pollution.
38. Explain the merits and demerits of Bohr theory of atom.

(6 × 4 = 24 Marks)

SECTION – D

(Answer **any two** questions. Each question carries **15** marks)

39. Explain :
 - (a) Antibiotics
 - (b) Explosives
 - (c) Cleansing action of soap

40. Write a note on :
- (a) Cortical hormones and their functions
 - (b) Classification of enzymes
41. Discuss about the classification of polymers.
42. Explain :
- (a) Rock dating
 - (b) Nuclear fusion.
 - (c) Artificial radioactivity.
43. What are quantum numbers? Discuss the significance of each quantum numbers.
44. Write a note on :
- (a) Detergents and their classification.
 - (b) Major sources of air pollution.
 - (c) Factors affecting purity of water.

(2 × 15 = 30 Marks)
