

(Pages : 3)

S – 1666

Reg. No. :

Name :

Fifth Semester B.Sc. Degree Examination, December 2023

First Degree Programme Under CBCSS

Chemistry

Open Course

CH 1551.1 : ESSENTIALS OF CHEMISTRY

(2017-2019 Admission)

Time : 3 Hours

Max. Marks : 80

SECTION – A

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

1. State modern periodic law.
2. What are isotopes? Give one example.
3. Define half life period of a radioactive substance.
4. What is the unit of radioactivity?
5. Mention two applications of polystyrene.
6. What are inorganic polymers? Give one example.
7. What is the chemical name of vitamin-C?
8. What is gun cotton chemically? Mention its important use.
9. Explain the term biomagnification.
10. What are the major functions of nucleic acids?

(10 × 1 = 10 Marks)

P.T.O.

SECTION – B

Short answer type

Answer any eight questions. Each question carries 2 marks.

11. What is half filled stability? Explain with an example.
12. State and explain Pauli's exclusion principle.
13. Explain group displacement law in nuclear chemistry.
14. What is meant by artificial radioactivity? Mention its applications in medical field.
15. Give the preparation of nylon-6.
16. What is vulcanization of rubber?
17. What are the biological functions of cortical hormones?
18. Give the classification of vitamins based on solubility with examples.
19. What are analgesic drugs? Draw the structure of aspirin.
20. What is TNG? Mention its uses.
21. Explain green house effect.
22. Explain how fertilizer causes water pollution?

(8 × 2 = 16 Marks)

SECTION – C

Short essay

Answer any six questions. Each question carries 4 marks.

23. Discuss the variation in periodicity of elements with respect to atomic radius and ionization potential.
24. Differentiate nuclear fission and fusion reactions.

25. What is carbon dating? Mention its application.
26. Write short note on natural rubbers.
27. Discuss the major characteristics of enzymatic reactions.
28. What are dyes? Explain its classification based on applications.
29. Explain the cleansing action of soaps.
30. Write short note on soil pollution.
31. What is CFC? Explain its effects on the environment.

(6 × 4 = 24 Marks)

SECTION – D

Long essay

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

32. Discuss the Bohr Theory of atoms. Mention its limitations.
33. Give the method of preparation and uses of :
 - (a) Nylone-6, 6
 - (b) Bakelite
 - (c) Terylene
34. (a) Write an essay on vitamin deficiency diseases. **10**
(b) What are detergents? Explain its types with examples. **5**
35. What are hard and soft water? Discuss the disadvantages of hard water. Mention the methods of removal of hardness. **(2 × 15 = 30 Marks)**