

5. (a) What is the principle behind the flame test, and how is it used to identify elements? Why do different elements produce different colours in a flame test? (3+2)
- (b) What are the primary chemical pollutants of air, and how do they affect human health? (2+2)
- (c) What are the environmental benefits of using alternate fuels over conventional fossil fuels? Mention any two. (2+1)
- (d) What are polymers, and how are they formed? Give examples. (2+1)
6. (a) Define the concept of zero-waste chemistry and explain its importance in sustainable development. (3+2)
- (b) What is the difference between a covalent and an ionic bond? Support your answer with an example for each. (2+2)
- (c) What are artificial sweeteners, and why are they used as sugar substitutes? (2+1)
- (d) How can agricultural waste be recycled in chemical production? (2+1)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 3316

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Unique Paper Code : 2174001004

Name of the Paper : GE, Chemistry and Society

Name of the Course : **B.Sc. Hons**

Semester : III/II/V

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
 2. Question No. one is compulsory.
 3. Attempt four questions in all.
 4. All questions carry equal marks.
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1. (a) What are some measures to mitigate the environmental issues caused by plastics? (2)
 - (b) Name two methods that can be used for the preservation of food. (2)

- (c) What are the common chemical ingredients in cosmetics, and what are their functions? (2)
- (d) Write the chemical reaction for the synthesis of aspirin from salicylic acid. (2)
- (e) Why was gold commonly used in ornaments in ancient civilizations? (2)
- (f) Define two main sources of soil pollution. (2)
- (g) Define surface activity and mention two chemicals which can act as surfactants. (2+1)
2. (a) List three chemical contaminants in water and their sources. What are the measures that can be taken by government and society to control water pollution? (3+2)
- (b) What are the functions and side effects of ibuprofen and paracetamol? (2+2)
- (c) How can consumers detect adulterants in milk, turmeric and sugar at home? (2+1)
- (d) What is acid rain, and what are the major sources of pollutants that cause acid rain? (2+1)
3. (a) How do soaps and detergents differ in their composition and mode of action? Why do detergents work well with hard water? (3+2)

- (b) Explain the health hazards caused by the consumption of adulterated food. What are the incidental adulterants commonly found in vegetables? (2+2)
- (c) Which metal causes: (i) Wilson's disease (ii) Minamata disease (iii) Itai-Itai disease? (2+1)
- (d) Explain the process of biomagnification. Name any two chemicals that have been biomagnified due to this process? (2+1)
4. (a) Discuss the significance of identifying copper, aluminium, and chromium ions in environmental and industrial samples. How does this information help in understanding pollution or material composition? (3+2)
- (b) What is a solubility test, and why is it performed in chemistry? (2)
- (c) Provide any two examples of alternate fuels that are considered environment friendly. (2)
- (d) What is the octet rule in chemical bonding? (2)
- (e) What are antipyretics? Give an example. (2)
- (f) What are edible molecule and non-edible molecules used in food processing. Give examples for each. (2)