

- (c) Covalent bonds are directional bonds while ionic bonds are non – directional. Explain with example ?
- (d) What are zero group elements ? Discuss their general characteristics. 4, 4, 4, 3 = 15
6. (a) Discuss the properties, synthesis, and therapeutic uses of paracetamol in detail.
- (b) What is the role of micelle formation in the cleansing action of soap ?
- (c) What is the difference between polymers and plastics, and how are they related ?
- (d) What are chemical weapons ? How are chemical weapons destroyed ? 5, 3, 3, 4 = 15

[This question paper contains 4 printed pages]

Your Roll No. :

Sl. No. of Q. Paper : 3519 I

Unique Paper Code : 2174001004

Name of the Paper : GE, Chemistry and Society

Name of the Course : B.Sc.(Hons.)

Semester : III/I/V

Time : 2 Hours **Maximum Marks : 60**

Instructions for Candidates :

- (a) Write your Roll No. on the top immediately on receipt of this question paper.
 - (b) Attempt any **four** questions in **all**. Question **NO.1** is compulsory.
 - (c) **All** questions carry equal marks.
1. (a) Who gave the modern periodic law, and what does it state ?
- (b) What are main ores used for the extraction of iron and aluminium ?

- (c) Which group constitutes d block elements and what is the position of Copper in modern periodic table ?
- (d) Which metals cause Itai – Itai disease and Minamata disease ?
- (e) What are food adulterants ? Name two common adulterants found in milk.
- (f) What is zero waste chemistry ? Name one principle of zero waste chemistry.
- (g) Draw the structure of aspirin and give its IUPAC name. 2,2,2,2,2,3=15
2. (a) What are the toxic effects of Pb (II), the reasons for its toxicity, and how can it be treated ?
- (b) What is the concept of hybridization in chemical bonding ? Explain with examples.
- (c) What is green chemistry ? What are the twelve principles of green chemistry ?
- (d) Differentiate between homopolymer and copolymer with examples. 4, 4, 4, 3=15

3. (a) What are preservatives ? Explain their role in food preservation with examples.
- (b) Describe the process of iron smelting in ancient times and its applications.
- (c) What are the methods of producing biodiesel and natural gas ? Discuss their potential as clean energy sources. 5,5,5=15
4. (a) What are qualitative and quantitative tests in chemistry, and how are they used to identify iron (Fe) ions in natural samples ?
- (b) What is the difference between covalent and ionic bonding ? Explain the formation, properties, and examples of each type of bond.
- (c) What is biomagnification ? Explain its process and effects on the environment and human health. 5,5,5=15
5. (a) What are artificial sweeteners and sweetening agents ? Give two examples and their advantages.
- (b) How does air quality monitoring contribute to determining the AQI and its impact on public health ?