

UNIT - V

9. (a) What is the Purpose of food coloring? What are the artificial colourings are generally permitted in food as per the Food Safety and Standard Act, 2006 In India? Provide the structures of two permitted artificial food colour mentioning its chemical class. $2+2+2=6$
- (b) What is Food browning? Discuss the chemical process involved in Enzymatic browning. How non-enzymatic food browning can be controlled? $2+3+3=8$
10. (a) What are Food additives? What is emulsifier? What is its role as food additive? $2+1+1=4$
- (b) What do mean by sugar substitutes? Provide the structures of sorbitol, saccharin. Discuss the enzymatic synthesis of sorbitol. $2+2+3=7$
- (c) What are the important trace elements present in eggs? 1
- (d) What are food preservatives? 2

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PG EVEN SEMESTER EXAMINATION, 2023**CHEMISTRY**

2nd Semester

Course No. : CHM - 556

(Chemistry in Everyday Life)

Full Marks : 70

Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions
(Answer five questions, selecting one from each unit)

UNIT - I

1. (a) Describe extraction and purification method of copper, silver and Gold used in ancient India. 9
- (b) How natural substances were used as soap and dyeing agents in ancient times? 5
2. (a) How cosmetics and ink were prepared and used in ancient India? Elaborate 5
- (b) Explain the atomic theory proposed by the Vaiseshik School of Philosophy. 3
- (c) Write the basic principles of Ayurveda and Chemistry. 6

(2)

UNIT - II

3. (a) What is chemical warfare agent? What are the important classes of chemical warfare agents? Give two examples of each class. $1+2+2=5$
- (b) Define blister agents of chemical warfare agent? What is sulfur mustard, nitrogen mustard and Lewisite? What are target organ and symptom of sulfur mustard toxicity? $1+2+2=5$
- (c) Write the chemical composition with structure of the following
(i) Tear gas, (ii) British P gas helmet, (iii) Zyklon gas and (iv) Agent orange $1 \times 4 = 4$
4. (a) What is nuclear weapon of mass destruction? Discuss the effects of nuclear weapons. Write the principle of atomic weapons. $1+3+3=7$
- (b) Write short notes on: $3+4=7$
(i) Biological weapons (ii) Chemical weapon convention.

UNIT - III

5. (a) Offer distinct symbols utilized for the identification of dangerous substances and propose suitable precautions for the storage of chemicals or reagents within each hazardous substance category. 10
- (b) Outline a waste disposal system for a chemistry laboratory

(3)

at the university level, which employs a range of solvents and perilous chemicals? 4

6. (a) What factors contribute to the classification of different nanoparticles as dangerous? Present seven rationales to support your response. 7
- (b) Furnish seven diverse approaches for the elimination of nanoparticles from our research laboratories. 7

UNIT - IV

7. (a) Elaborate on the detrimental effects of hydrogen sulphide gas on human health. Explore substitute options for employing hydrogen sulphide gas in practical sessions involving inorganic group analysis. $5+4=9$
- (b) Recommend five strategies for addressing the shortcomings identified in the research laboratories of the Department of Chemistry, as indicated by your survey. 5
8. (a) In what ways do (i) asbestos and (ii) chromium(IV) impact human existence? $2.5 \times 2 = 5$
- (b) What are the three main pathways by which individuals can come into contact with chemicals and pollutants? Describe each of these routes. Additionally, what are the possible adverse health outcomes and the steps that can be taken to prevent them? $3+3+3=9$

(Turn Over)