

This question paper contains 3 printed pages]

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S. No. of Question Paper : 13326

Unique Paper Code : 3184001003

Name of the Paper : Toxic Substances and Human Health
(UGCF-NEP)

Name of the Course : Generic Elective (GE)

Semester : VII

Duration : 3 Hours

Maximum Marks : 90

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt five questions in all.

Question No. 1 is compulsory.

Subparts of the questions should be attempted together.

Draw illustrations or diagrams wherever necessary.

1. (a) Define the following (any four) :

4×1=4

(i) Toxicants

(ii) Efficacy

(iii) Potency

(iv) LD50

(v) Adverse Drug Reactions (ADRs).

P.T.O.

(b) Explain the following (any *five*) :

5×3=15

- (i) Mushroom Toxin
- (ii) Selective toxicity
- (iii) Dose-Response Relationship
- (iv) Absorption of Toxicants through different routes
- (v) Styrene and its potential hazards
- (vi) Ethylene Glycol and its toxic effects.

(c) Differentiate between (any *three*) :

3×3=9

- (i) Acute and Chronic Toxicity
- (ii) ED50 and TD50
- (iii) Environmental toxicants and Household toxicant
- (iv) Exotoxin and Endotoxin.

(d) Expand the following (any *two*) :

2×1=2

- (i) NOAEL
- (ii) PM
- (iii) VOC.

2. Explain the toxic effects of the following :

5,5,5

- (a) Ammonia and Sodium Hypochlorite as household toxicants
- (b) DDT and Lindane as pesticide residues
- (c) Food Adulterants and Food Preservatives.

3. (a) What is PM10 and PM2.5 ? How does long-term exposure to them contribute to chronic diseases such as COPD and cardiovascular disorders ? 9
- (b) Discuss the role of nitrogen oxides (NO₂) and sulphur dioxide (SO₂) in environmental pollution. How do these gases contribute to acid rain ? 6
4. (a) How do common household cleaners and disinfectants pose toxic risks to human health ? Explain with suitable examples. 9
- (b) Explain the toxic effects of pyrethroid pesticides on human health and their mode of action. 6
5. (a) Explain the health risks of exposure to heavy metals like lead and cadmium in cosmetics and their potential effects on the human body. 9
- (b) How bioavailability affects absorption and distribution of toxic substances in the body ? Include factors that influence bioavailability. 6
6. (a) Describe the mechanisms by which drugs induce toxicity at both therapeutic and overdose levels, providing appropriate examples. 9
- (b) Certain drugs can cause foetal abnormalities when administered to the pregnant mother. Explain with an example. 6