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6. (a) Discuss the role of nitrogen oxides (NO_x) and sulfur dioxide (SO_2) in environmental pollution. How do these gases contribute to acid rain and what are their toxic effects on human health?
- (b) Compare Lindane's toxic effects with those of dichlorodipehnyltrichloroethane. (9,9)

(200)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 5031 J

Unique Paper Code : 3184001003

Name of the Paper : Toxic Substances and Human Health

Name of the Course : GE- Biomedical Science (NEP-UGCF)

Semester : II/IV/VI

Duration : 3 Hours

Maximum Marks : 90

Instructions for Candidates

1. Write your Roll. No. on the top immediately on receipt of this question paper.
2. Attempt five questions in all.
3. All questions carry equal marks.
4. Attempt subparts of a question together.
5. Draw illustrations or diagrams wherever necessary.

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1. (a) Define (Any Four) (2x4=8)

(i) Median Lethal Dose

(ii) Clinical toxicology

(iii) Therapeutic Index

(iv) Teratogen

(v) Antifreeze agent

(b) Differentiate between the following (Any Four)
(2.5x4=10)

(i) Acute and Chronic Toxicity

(ii) Amatoxin and Botulinum Toxin

(iii) Toxicokinetics and Toxicodynamics

(iv) Graded and Quantal Dose Response Curve

(v) OATPs and P-gp

2. Explain the mechanism of toxicity of (Any Three)
(6x3=18)

(a) Ammonia

(b) Phosphides

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(c) 1,4-Dichlorobenzene

(d) Food additives

3. (a) Discuss the major routes of toxicant elimination from the human body.

(b) Describe the mechanisms by which drugs induce toxicity at both therapeutic and overdose levels, providing appropriate examples. (9,9)

4. (a) How does bioavailability impact the absorption and distribution of toxic substances in the body? Discuss the factors that influence bioavailability.

(b) Discuss the toxic effects of an organic solvent and a heavy metal commonly found in cosmetic products. (9,9)

5. (a) What is biomagnification, and how does it influence the accumulation of toxic substances in the food chain? Discuss its implications for human health with a relevant example.

(b) What is PM10 and PM2.5? How does long-term exposure to them contribute to chronic diseases such as COPD and cardiovascular disorders? (9,9)

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