

This question paper contains 3 printed pages]

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S. No. of Question Paper : 5296

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

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.

All questions carry equal marks.

Attempt subparts of a question together.

Draw illustrations or diagrams wherever necessary.

1. (a) Define (any four) :

4×2=8

(i) Acute toxicity

(ii) Toxicogenomics

(iii) Idiosyncrasy

(iv) ABC Transporter

(v) Half-life of a toxicant.

P.T.O.

(b) Differentiate between the following (any *four*) :

4×2½=10

- (i) Occupational and Accidental exposure
- (ii) Environmental toxicants and Household toxicants
- (iii) NOAEL and ADI
- (iv) Endotoxin and Exotoxin
- (v) PAHs and VOCs.

2. Explain the mechanism of toxicity of (any *three*) :

3×6=18

- (a) Sodium hypochlorite
- (b) Mosquito repellent
- (c) Sulfur dioxide
- (d) Food preservatives.

3. Write short notes on :

3×6=18

- (a) Selective toxicity
- (b) Presystemic metabolism
- (c) Drugs as toxicants.

4. (a) Discuss the factors that influence the percutaneous absorption of toxicants.

(b) Discuss the classification of toxicants based on their sources, exposure routes and effects on biological systems.

5. (a) What are the toxic effects of malathion on human health and how does its mechanism of action contribute to its toxicity ?
- (b) What are adverse drug reactions ? Explain unpredictable and predictable drug reactions with examples. 9,9
6. (a) What is DDT ? How has its widespread use contributed to environmental pollution and ecological toxicity ?
- (b) Explain the mechanism of dioxin toxicity and its interaction with the aryl hydrocarbon receptor (AhR). 9,9