

(c) What are adverse drug reactions? How do 'type A reactions' differ from 'type B reactions'? Give an example of each. (6,6,6)

5. (a) What role do the kidneys play in the excretion of toxic substances from the body?

How does the pH of urine affect the excretion of weak acids and bases?

(b) Differentiate between drug intolerance and drug dependence. Give an example of each.

(c) What are the main sources of nitrogen oxide emissions and how do nitrogen oxides cause toxicity at the cellular level? (6,6,6)

6. (a) Discuss the potential toxic effects of using cosmetics containing heavy metals.

(b) What do $PM_{2.5}$ and PM_{10} stand for in the AQI report? How do they contribute to environmental health issues?

(c) What are dioxins, and how are they formed in the environment? Explain the role of the aryl hydrocarbon receptor (AhR) in dioxin toxicity. (6,6,6)

(200)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 3502

I

Unique Paper Code : 3184001003

Name of the Paper : Toxic Substances and Human Health

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

Semester : I

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.

1. (a) Explain the following (**Any Four**) : (2×4=8)

(i) Xenobiotic

(ii) Acceptable Daily Intake

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(iii) Idiosyncrasy

(iv) Antifreeze agent

(v) Efficacy

(b) Differentiate between the following (**Any Two**) :
(3×2=6)

(i) Occupational and Accidental Exposure

(ii) VOCs and PAHs

(iii) Graded and Quantal Dose Response Curve

(c) State True or False. Justify your answer. (**Any Two**) :
(2×2=4)

(i) Systemic availability of an orally administered toxicant is dependent on first pass metabolism.

(ii) The lethal dose refers to the dose at which 50 test animals die.

(iii) Styrene is a naturally occurring compound that poses no health risks when used in disposable utensils.

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2. Explain the mechanism of toxicity of (**Any Three**) :
(6×3=18)

(a) Sodium hypochlorite

(b) Organophosphates

(c) Dichlorodiphenyltrichloroethane

(d) Carbon monoxide

3. Write a short note on (**Any Three**) : (6×3=18)

(a) Health risks of food adulterants

(b) Xenobiotic Transporters

(c) Teratogenicity

(d) Minamata disease

4. (a) Define acute toxicity and chronic toxicity. How do they differ in terms of exposure duration and effects?

(b) What are the different types of microbial toxins, and how do they differ in their mechanisms of action?

P.T.O.