

5. (a) Toxic substances may get stored in various body tissues. Comment and explain any two of these mechanisms. (7)
- (b) The toxic effects of cosmetics can be attributed to the presence of heavy metals. Justify the statement and explain it with the help of two examples. (5)
- (c) Elaborate upon the 'Concept of Bioavailability'. (4)
6. (a) Name two representative Polycyclic Aromatic Hydrocarbons (PAHs) and explain their route of exposure and mechanism of toxicity. (7)
- (b) Explain how some chemicals get absorbed through the relatively impermeable barrier of the skin to produce systemic effects. (5)
- (c) Coumarin derivatives are often used in rat kills. Explain their mechanism of action. (4)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 6034 H

Unique Paper Code : 3184001003

Name of the Paper : Toxic Substances and Human Health (GE)

Name of the Course : **B.Sc. (H) Biomedical Science (NEP-UGCF)**

Semester : II

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. Question no. 1 is compulsory.
4. Attempt subparts of a question together.

1. (a) Explain the following (**Any Five**) : (2×5=10)

- (i) Toxicant
- (ii) Xenobiotic
- (iii) Therapeutic Index
- (iv) Acute Exposure

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- (v) Drug Abuse
- (vi) Teratogen
- (b) Differentiate between the following (**Any Three**)
(3×3=9)
- (i) Efficacy and Potency
- (ii) Toxicokinetics and Toxicodynamics
- (iii) LD50 and TD50
- (iv) Mushroom Toxin and Bacterial Toxin
- (c) State True or False. Justify your answer. (**Any Two**)
(2×2=4)
- (i) Weak organic acids are absorbed more readily from the intestine than from the stomach.
- (ii) Dichlorodiphenyltrichloroethane targets the picrotoxin site on the chloride channel.
- (iii) Carboxyhemoglobin is a potential biomarker of carbon monoxide exposure and hypoxia.
- (d) Expand the following (**Any Three**)
(1×3=3)
- (i) ADI
- (ii) BCRP
- (iii) SLC
- (iv) OATP

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2. Explain the mechanism of toxicity of (**Any Four**) :
(4×4=16)
- (a) Pyrethroids
- (b) Ethylene glycol
- (c) Lindane
- (d) Sulphur dioxide
- (e) Sodium hypochlorite
3. Write a short note on (**Any Four**) :
(4×4=16)
- (a) Dose response relationship
- (b) Biliary excretion of toxicants
- (c) Minamata Disease
- (d) Selective Toxicity
- (e) Food adulteration
4. (a) What do you understand by 'exposure'? Explain any three routes by which humans get exposed to toxic substances, with examples. (8)
- (b) Compare and contrast the adverse effects of drugs at therapeutic doses with drug overdose. Give examples. (8)

P.T.O.