

[73]

Note: Answer to all questions (including multiple choice questions) should be written in the provided answer book only.

Number of Printed Pages = 2

SARDAR PATEL UNIVERSITY
M.Sc (II Semester) Examination (CBCS)
Friday, 7th December, 2012
2:30 pm to 5:30 pm
Biotechnology
PS02EBIT02 – Toxicology

TOTAL MARKS: 70

Q.1 Tick mark / select the correct answer for the following. (Only correct option against given question number needs to be written in provided answer book) (08 Marks)

- 1) The property of the drug to bind to receptors is known as
 - a) Efficacy
 - b) Intrinsic property
 - c) Potency
 - d) Affinity

- 2) The effect of certain chemicals can cause injury at the site of first contact with an animal is termed as:
 - a) Total effect
 - b) Systemic effect
 - c) Local and systemic effect
 - d) Local effect

- 3) The shape of quantal dose response curve is:
 - a) Bell shape
 - b) U shape
 - c) J shape
 - d) sigmoid

- 4) The toxic metal present in indoor is:
 - a) Chromium
 - b) Cadmium
 - c) Nickel
 - d) Lead

- 5) Acid rain consists of ppt of oxides of:
 - a) CO_x and H₂O
 - b) CO and NO
 - c) SO_x and NO_x
 - d) H₂S and CO_x

- 6) Which gas is responsible for green house effect:
 - a) H₂S
 - b) NO₂
 - c) CO₂
 - d) NH₃

- 7) The branch of toxicology which Deciphers and analyzes toxicological data for risk estimation is:
 - a) Forensic toxicology
 - b) Environmental toxicology
 - c) Regulatory toxicology
 - d) Preclinical toxicology

- 8) Minamata disease is due to toxicity of:
 - a) Zinc
 - b) Copper
 - c) Mercury
 - d) Lead

Q.2 Answer any seven from the following:

(14 marks)

- What is pharmacodynamics?
- Explain local and systemic effects of toxicants.
- What is meant by biological availability of a metal?
- Distinguish between acute toxicity and chronic toxicity?
- List the dietary changes that will lower cancer risk?
- What are the symptoms of minamata disease?
- Enumerate the list of enzymes in phase I reactions involving xenobiotic metabolism?
- What is dose response curve.
- Write down the principal gases responsible for greenhouse effect?

Q.3 A: What a shortnote on the factors influencing toxicity?

(6 marks)

Q.3 B: Write a note on the scope and importance of toxicology?

(6 marks)

OR

Q.3 B: What is LD₅₀ of a toxicant? Write a note on determination of LD₅₀ and its application

(6 marks)

Q.4 A: Describe metabolism, risk of toxicity and management of over dosage of paracetamol

(6 marks)

Q.4 B: Describe phase II reactions of biotransformation of xenobiotics with any two examples

(6 marks)

OR

Q.4 B: Write short notes on:

(6 marks)

- DNA repair assays
- Bruce Ames test

Q.5 A: Explain the importance of sodium nitrate and sodium nitrite as food additives and the toxicity risk analysis associated with these compounds

(6 marks)

Q.5 B: Explain the toxicity of polychlorinated biphenyls (PCB's)

(6 marks)

OR

Q.5 B: Write a detailed account on the environmental implications of insecticides

(6 marks)

Q.6 A: Which metals are heavy metals? Describe the toxic effect of lead and arsenic poisoning. **(6 marks)**

Q.6 B: Write a brief account on any three common air pollutants, their source and their ill-effects on humans exposed to these pollutants **(6 marks)**

OR

Q.6 B: Write short note on (a) Asbestosis (b) Acid rain

(6 marks)

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