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MBCE-016

M. SC. (HONOURS)

(BIOCHEMISTRY)

(MSCBCH)

Term-End Examination

December, 2025

MBCE-016 : TOXICOLOGY

Time : 3 Hours

Maximum Marks : 100

Note : (i) Answer any **five** questions.

(ii) All questions carry equal marks.

1. (a) Define the following terms : 5×2=10

(i) Toxicology

(ii) Xenobiotics

(iii) Tolerance

(iv) Redox cycling

(v) Venom

- (b) What are mycotoxins ? Name any *four* mycotoxins and mention their adverse health effects in humans. 10
2. (a) Discuss the features which influence the toxic response to a toxicant. 10
- (b) Describe the principle and method of Ames test. 10
3. (a) Explain how do the following factors affect the xenobiotic metabolism :
2×5=10
- (i) Species
- (ii) Physiological factors
- (b) Discuss the influence of polymorphism in xenobiotic metabolizing enzymes on xenobiotic response. 10
4. (a) Describe the role of cytochrome P₄₅₀ in xenobiotic metabolism. 10
- (b) Write short notes on the following :
2×5=10
- (i) Hepatotoxicity by paracetamol
- (ii) Cholestasis

5. (a) Which antidotes are used for cyanide and methanol toxicity ? Write their mechanism of action. 5
- (b) Write the adverse effects of toxicants on skin and explain them. 5
- (c) Explain the nephrotoxic effects of amphotericin B and chloroform. 5
- (d) What are the functions of kidney ? Which factors make it susceptible to the toxic insult ? 5
6. (a) Write short notes on any *two* of the following : 2×5=10
- (i) Excretion of toxicants
 - (ii) LD₅₀ (Lethal Dose-50)
 - (iii) Tetragenicity test
- (b) Describe the toxic agents that affect cardiovascular system. 10

7. (a) Describe various types of lead toxicity and explain its effect on heme synthesis. 10
- (b) Discuss different sources of radioactive pollution. 10
8. (a) Describe major routes through which pollutants enter aquatic and terrestrial ecosystem. 10
- (b) Discuss the metabolism of any *two* pesticides with examples. 10

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