

M. SC. (HONOURS)

(BIOCHEMISTRY)

(MSCBCH)

Term-End Examination

June, 2026

MBCE-016 : TOXICOLOGY

Time : 3 Hours

Maximum Marks : 100

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

(ii) All questions carry equal marks.

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1. (a) Elaborate the toxic effects of cosmetic ingredients and food additives. 10
 - (b) Explain the following : 2×5=10
 - (i) Local and systemic toxicity
 - (ii) Reversible and irreversible toxic effects

2. (a) Give an overview on ADME of toxicants. 10
- (b) What are the uses of LD₅₀ and NOAEL ? Explain. 10
3. (a) What are teratogens ? How are they tested ? 5
- (b) Explain host-mediated assay. 5
- (c) Describe the phase-II reactions of Xenobiotic metabolism. 10
4. (a) How does polymorphism in Xenobiotic transporters influence the response to a Xenobiotic ? Give an example. 10
- (b) What is meant by target organ ? Why do toxicants show selective toxicity ? Justify your answer with appropriate examples. 5
- (c) Give a brief account of systemic lung toxicants. 5
5. (a) Explain the functional anatomy of liver. 5
- (b) What are nephrotoxic agents ? Explain any *one* of them. 5

- (c) Discuss the causes of fatty liver. Name *two* toxicants which promote fatty liver. 5
- (d) Write a short note on acute Kidney injury. 5
6. (a) Explain the source and toxicity mechanism of the following toxins on cardiovascular system : $4 \times 2 \frac{1}{2} = 10$
- (i) Bradykinin potentiating peptides
 - (ii) Doxorubicin
 - (iii) Cocaine
 - (iv) General anesthetics
- (b) What makes nervous system susceptible to toxic insults ? 10
7. (a) Explain the processes of bioaccumulation, biomagnification and biodegradation in relation to the fate of pollutants. 10
- (b) Explain the toxic effects and mechanism of toxicity of arsenic. 5
- (c) Discuss neurological toxicity of Mercury and explain its mechanism. 5

8. (a) Discuss any *two* accidents that led to the radioactive pollution. Also explain the protective strategies to avoid such accidents in future. 10
- (b) Explain different classes of pesticides based on their chemical composition. Write *two* examples of each class. 10

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