

Five-Year Integrated M. Sc. Examination 2022

Earth and Environmental Science

Semester: VII

Paper: EES-4-7-2

Subject: Environmental Toxicology

Time: 4 Hours

Full Marks: 80

The marks of the questions are indicated on the margin.

Answer **Question No.1** and **any four** from the rest.

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| 1. | Write short notes on any four . a) Biomagnification b) Metallothionein c) Mesothelioma d) Metal fume fever e) Silicosis f) Grasshopper effect | 4x4 = 16 |
| 2. | What are environmental factors that affect toxicity? Discuss the role of these factors on toxicity of a chemical. | 6+10 = 16 |
| 3. | Illustrate biotransformation of Phase I and Phase II systems with a suitable diagram. Explain how Cytochrome P450 helps in biotransformation. | 10+6 = 16 |
| 4. | What are POPs? Enumerate them. Discuss the various physico-chemical factors which influence the fate in the environment. | 2+4+10 = 16 |
| 5. | What are the sources of CO? What are the signs and symptoms of it? Discuss in detail the pathophysiology of its toxicity. | 2+4+10 = 16 |
| 6. | Discuss the mechanism of toxicity of (a) Cadmium and (b) Arsenic | 8+8 = 16 |
| 7. | Differentiate PM _{2.5} and PM ₁₀ . Explain the process of deposition of particles in lung and its clearance mechanisms. | 4+8+4 = 16 |