

M.Sc. Examination, 2019
Semester-IV
Environmental Science
Course : MEO-444
(Soil Pollution)

Time : 3 Hours

Full Marks : 40

Questions are of value as indicated in the margin

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

1. Write short notes on **any four** of the following : 2×4=8
 - a) Properties and behavior of Chromium in soil
 - b) Phosphate solubilizing and bacteria
 - c) Phytovolatilization
 - d) Toxic chemicals in Pharmaceuticals and Personal Care Products
 - e) Bioaccumulation and Biomagnification
 - f) Absolute and relative bioavailability
 2. Discuss the physical and chemical techniques to remediate organics contaminated soil. 8
 3. Discuss the transformation of arsenic in soil. What are the factors which affect its transformation? Give a note on its remediation strategy. 2+4+2=8
 4. Write short notes on the following techniques and their importance. 4×2=8
 - a) Tessier technique
 - b) Simple Bioavailability Extraction Test (SBET)
 - c) Physiological Based Extraction Test (PBET)
 - d) Ames Test.
 5. Discuss the factors which influence the chemical bioavailability in soil. 8
 6. Discuss the mechanism of ammonification, nitrification and the role of inhibitors in controlling Nitrogen transformation and losses. What are the impacts of Nitrogen losses on environment? 6+2=8
 7. Give short notes on sources, chemistry and toxic effects of :
 - a) PAHs
 - b) Dioxins4×2=8
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