

M.Sc. Examination, 2019

Semester-II

Environmental Science

Course : MEC-25

(Soil Pollution and Solid Waste Management)

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) Toxic effects of cadmium
 - b) Sorption curves
 - c) Phytoremediation
 - d) K_{OC} and K_{OA}
 - e) Biogas
 - f) Biomedical waste
2. Discuss the physical and chemical methods for remediation of heavy metal contaminated soil. 8
3. Elaborate the role of micro-organism in the following : 4+4=8
- a) Carbon cycle
 - b) Nitrogen cycle
4. a) What are the factors which influence the transformation, translocation and persistence of organic chemicals in the environment?
- b) Compare and contrast the fate of 2, 3, 7, 8 –TCDD and CCl_4 in the environment, with the following physico-chemical properties. 4+4=8

	Physico-Chemical properties	TCDD	CCl_4
a)	Log Kow	6.80	2.64
b)	Solubility in water (25°C)	1.9×10^{-5} mg/L	0.081 g/100ml
c)	Log Koc	7.25	2.04
d)	Vapour pressure (mm Hg) at 25°C	1.5×10^{-9} to 3.4×10^{-5}	143

5. From your point of view discuss the protocols to manage the problems of solid wastes at Visva-Bharati : a) Hostels b) Laboratories c) Administrative Office d) Mela(s) 4×2=8
6. What is Hazardous waste? Give a note on their classification and management. 1+2+5=8
7. Give notes on : 4+4=8
- a) Types of vermicomposting system
 - b) Physico-chemical changes in organic waste during vermicomposting