

SOIL POLLUTION AND MANAGEMENT

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	The Earth's crust is mainly composed of: (i) Iron and nickel (ii) Silicate minerals (iii) Organic matter (iv) Water	K1	CO1
	2	Which process recycles elements between Earth's spheres? (i) Photosynthesis (ii) Geochemical cycling (iii) Evaporation (iv) Respiration	K2	CO1
2	3	Soil formation is primarily influenced by: (i) Only climate (ii) Only organisms (iii) Multiple factors including climate and parent material (iv) Only time	K1	CO2
	4	Leaching in soil results in (i) Accumulation of nutrients (ii) Soil compaction (iii) Increase in soil density (iv) Loss of soluble nutrients	K2	CO2
3	5	Soil water holding capacity depends mainly on (i) Soil texture and structure (ii) Soil color (iii) Soil temperature (iv) Soil organisms	K1	CO3
	6	Sodium Adsorption Ratio (SAR) is used to measure (i) Soil fertility (ii) Soil moisture (iii) Soil salinity hazard (iv) Soil acidity	K2	CO3
4	7	Soil sampling should be done to (i) Increase soil fertility (ii) Analyse soil properties (iii) Improve soil texture (iv) Reduce erosion	K1	CO4
	8	Redox potential in soil indicates (i) Oxidation-reduction conditions (ii) Soil color (iii) Soil density (iv) Soil porosity	K2	CO4
5	9	Land degradation leads to (i) Increased productivity (ii) Increased nutrients (iii) Improved soil structure (iv) Loss of soil fertility	K1	CO5
	10	Afforestation helps in (i) Soil erosion increase (ii) Soil pollution (iii) Soil conservation (iv) Land degradation	K2	CO5

Cont...

SECTION - B (35 Marks)
 Answer ALL questions
 ALL questions carry EQUAL Marks

(5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Describe the formation of atmosphere and hydrosphere during Earth evolution.	K2	CO1
		(OR)		
	11.b.	Explain geochemical classification and distribution of elements in Earth systems.		
2	12.a.	Discuss the role of climate and organisms in soil formation.	K3, K2	CO2
		(OR)		
	12.b.	Explain the impact of fertilizers and pesticides on soil quality and health.		
3	13.a.	Explain soil profile and factors influencing soil temperature.	K2, K3	CO3
		(OR)		
	13.b.	Discuss soil organic matter fractions and their role in soil fertility.		
4	14.a.	Describe methods for determination of soil organic matter and soluble salts.	K2	CO4
		(OR)		
	14.b.	Explain the concept of nutrient availability and critical limits in soils.		
5	15.a.	Discuss types of land degradation and their impact on soil productivity.	K3, K2	CO5
		(OR)		
	15.b.	Explain reclamation methods for salt-affected soils and mine lands.		

SECTION - C (30 Marks)

Answer ANY THREE questions
 ALL questions carry EQUAL Marks

(3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Explain how elements are distributed and cycled in the lithosphere, hydrosphere, and biosphere, and discuss their environmental significance.	K4	CO1
2	17	Discuss the sources, pathways, and effects of soil contamination, and suggest suitable control measures.	K5	CO2
3	18	Explain the role of soil colloids and organic matter in nutrient retention and soil fertility.	K4	CO3
4	19	Discuss different methods used for soil analysis and explain their importance in assessing soil quality.	K5	CO4
5	20	Explain various soil remediation techniques and discuss how they help in improving soil quality and sustainability.	K6	CO5

Z-Z-Z

END