

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2023
(Second Semester)

Branch - ENVIRONMENTAL SCIENCE

SOIL POLLUTION AND MANAGEMENT

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (5 x 1 = 5)

1. What are the two conditions believed to be required for the formation of igneous rocks?
 - (a) Low temperature and molten state
 - (b) Molten state and very high temperature
 - (c) Molten state and moderate temperature
 - (d) Crystallized state and moderate temperature
2. Which tends to easy weathering?

(a) White mica	(b) Black mica
(c) Feldspar	(d) None of the above
3. Which one of the following plant nutrient imparts resistant to disease and insect-pest?

(a) Potassium	(b) Nitrogen
(c) Phosphorus	(d) Calcium
4. Indian soils are deficient in:

(a) Boron & Sulphur	(b) Nitrogen & Zinc
(c) Copper & Calcium	(d) Iron & Manganese
5. The most potent source of Cd in agricultural soils from

(a) Transportation	(b) Animal manures
(c) Industries	(d) Phosphatic fertilizers

SECTION – B (15 Marks)

Answer ALL Questions

ALL Questions carry EQUAL marks (5 x 3 = 15)

6. a. Differentiate between the continental crust and ocean crust.
OR
b. Explain the formation of metamorphic rocks.
7. a. Critically analyze the pros and cons of soil tillage.
OR
b. Explain the sources of organic contaminants in soil.
8. a. Outline the significance of Sodium Absorption Ratio (SAR) on soil health.
OR
b. State the different soil organic matter fractions and their relevance to soil function.
9. a. Explain the different methods of soil sampling.
OR
b. How to interpret the soil analytical data pertaining to mineral nutrients with prescribed standards?
10. a. State the sources of heavy metals in soil contamination.
OR
b. Illustrate the factors responsible for soil degradation.

Cont...

SECTION – C (30 Marks)

Answer ALL Questions

ALL Questions carry EQUAL marks

(5 x 6 = 30)

11. a. Describe the Goldschmidt's geochemical classification of elements.
OR
b. Explain the different types of igneous rocks based on place and time taken in cooling of the molten matter.
12. a. Explain the various physical and chemical soil weathering processes.
OR
b. Describe the role of soil microorganisms for degradation of pesticides.
13. a. Explain the different soil edaphic factors influencing plant growth.
OR
b. Illustrate the ways to interact organic compounds with clay minerals.
14. a. Is DTPA extracting bioavailable soil nutrients compatible to total nutrient content?
– Discuss.
OR
b. Enumerate the principle for determination of organic matter.
15. a. Categorize the different types of soil erosion according to erosion agents.
OR
b. Suggest the suitable sustainable technology for mine land reclamation.

Z-Z-Z END