

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2024  
(Third Semester)

Branch – ENVIRONMENTAL SCIENCE

**INDUSTRIAL PROCESS AND ENVIRONMENTAL SAFETY**

Time: Three Hours

Maximum: 50 Marks

**SECTION-A (5 Marks)**

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- 1 What is the limiting concentration of SO<sub>2</sub> from liquid fuel in new refineries?  
(i) 550 mg/Nm<sup>3</sup> (ii) 650 mg/Nm<sup>3</sup>  
(iii) 750 mg/Nm<sup>3</sup> (iv) 850 mg/Nm<sup>3</sup>
- 2 Which pollutants are associated with the "Color Index" in textile dyeing?  
(i) Particulate matter (ii) Volatile organic compounds (VOCs)  
(iii) Chemical Oxygen Demand (iv) Color fastness chemicals
- 3 Identify the pollutants which is a major concern in the context of cement production?  
(i) Oxygen (ii) Nitrogen oxide  
(iii) Potassium (iv) Lead
- 4 Which organization is known for promoting cleaner production and sustainable industrial practices globally?  
(i) World Health Organisation (WHO)  
(ii) International Monetary Fund (IMF)  
(iii) United Nations Industrial Development Organization (UNIDO)  
(iv) World Trade Organization (WTO)
- 5 Why mismanagement of battery waste can be harmful?  
(i) Texture (ii) Heavy metals  
(iii) Plastics (iv) Odor

**SECTION - B (15 Marks)**

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a Discuss the specific standards for emission of air pollutants in the environment.  
OR  
b Illustrate the effects of waste in the receiving water system.
- 7 a Classify about source and characteristics of waste in the paper industry.  
OR  
b Recommend/list the water control methods to be followed in the tanneries.
- 8 a Explain the process of electroplating.  
OR  
b Discuss the source of waste produced in smelting industries.
- 9 a Explain waste audit and provide the list of components.  
OR  
b Discuss the quality requirements of reusable wastewater.
- 10 a State hazardous waste and list its waste management methods.  
OR  
b Explain the online consent management and monitoring system.

Cont...

**SECTION -C (30 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a Enumerate the standards for discharge of industrial effluent in wastewater.  
OR  
b Interpret the problems and solutions from the case studies of the distillery industry.
- 12 a Enumerate the characteristics and methods in textile wastewater treatment.  
OR  
b Design a control method in the manufacturing process of nitrogen fertilizer to reduce nitrous oxide emission.
- 13 a Differentiate the source of waste in the pharmaceutical and food industries.  
OR  
b Categorize the control methods based on the manufacturing process of oil.
- 14 a Assess the application potential of cleaner production in different industries.  
OR  
b Assess the status of industrial reuse of water in India.
- 15 a Differentiate the management of waste in biomedical and hazardous institutions.  
OR  
b Classify the steps involved in issuing consent to establish and operate for different categories of industries.

Z-Z-Z

END