

**MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL**  
**DEPARTMENT OF CHEMISTRY**

**COURSE: B.Tech SEMESTER-II**

**End-Term Exam JUNE-2022**

**SECTIONS - A, B, C, D, E**

**Total Marks: 60**

**Time: 3 hours**

**Subject: ENVIRONMENTAL SCIENCE**

**Subject Code: CHY-107**

<b>IMPORTANT INSTRUCTIONS: Attempt all five Units.</b>		
<b>Ques.</b>	<b>UNIT 1</b>	<b>Marks</b>
A.	<p>Give reason (any two):</p> <p>1. Percentage of Nitrogen in our atmosphere is extremely high as compared to other gases. Why?</p> <p>2. Why ozone gas is present at a particular height and not evenly throughout the atmosphere?</p> <p>3. Why Particulate matter is considered as an Air pollutant?</p>	2 × 02
B.	<p>Short-answer questions (any two):</p> <p>1. Explain the function and structure of catalytic converter in an automobile, with the help of a clear diagram.</p> <p>2. What is lapse rate? Explain the reason why positive lapse rate is found in troposphere whereas Stratosphere follows negative lapse rate.</p> <p>3. Explain the principle behind Electrostatic Precipitators to remove air pollution.</p>	2 × 03
C.	<p>Long-answer questions (any two):</p> <p>1. What is the impact of CO<sub>2</sub> and CH<sub>4</sub> in Global Warming? Discuss its causes and preventive measures.</p> <p>2. What are the major sources of Indoor Air pollution. How can indoor pollution be prevented?</p> <p>3. Explain the phenomenon of Ozone hole in Stratosphere. Why is it concentrated mostly over Antarctica?</p>	2 × 05
<b>UNIT 2</b>		
A.	<p>Short-answer questions (any two):</p> <p>1. What is the significance of grit chamber in preliminary step of waste water treatment?</p> <p>2. Explain the difference between point-source and non-point source pollution.</p> <p>3. Why is heat considered as water pollutant?</p>	2 × 03
B.	<p>Long-answer questions (any two):</p> <p>1. Discuss the classification of water pollutants in detail with suitable examples.</p>	2 × 05

	<p>2. Discuss the objective of secondary treatment of waste water. Also describe the functioning of Trickling filter process with diagram.</p> <p>3. What is the importance of determination of BOD and COD of wastewater. Give their experimental determination also.</p>	
<b>UNIT 3</b>		
A.	<p>Short-answer questions (any two):</p> <p>1. Why continental crust has risen up whereas oceanic crust has dipped down?</p> <p>2. Explain how process of freezing help in the formation of soil?</p>	$1 \times 03$
B.	<p>Long-answer questions (any one):</p> <p>1. What are the major factors responsible for soil pollution? Also explain the effects of soil pollution.</p> <p>2. Explain the causes of noise pollution and the steps which can be taken to prevent it.</p>	$1 \times 05$
<b>UNIT 4</b>		
A.	<p>Short-answer questions (any one):</p> <p>1. What is the difference between Pyramids of biomass from pyramid of energy? Which one is more suitable?</p> <p>2. How Phosphorus cycle differ from all other biogeochemical cycles?</p>	$1 \times 03$
B.	<p>Long-answer questions (any one):</p> <p>1. What does Biogeochemical cycles mean? Discuss all five steps of Nitrogen Cycle with properly labeled diagram.</p> <p>2. Describe in detail the effect of plastic pollution on environment.</p>	$1 \times 05$
<b>UNIT 5</b>		
A.	<p>Short-answer questions (any one):</p> <p>1. Discuss any one synthesis based on green chemistry.</p> <p>2. Explain how Green Computing effects cost saving.</p>	$1 \times 03$
B.	<p>Long-answer questions (any one):</p> <p>1. Discuss principals of Green Chemistry? What are its advantages?</p> <p>2. What is the concept behind Sustainability? Discuss its ten commandments in detail.</p>	$1 \times 05$