



# UNIVERSITY OF THE PUNJAB

Seventh Semester 2017

Examination: B.S. 4 Years Programme

Roll No. ....

**PAPER: Environmental Chemistry**  
**Course Code: CHEM-401**

**TIME ALLOWED: 2 hrs. & 30 mins.**

**MAX. MARKS: 50**

*Attempt this Paper on Separate Answer Sheet provided.*

(SUBJECTIVE TYPE)

**Q.2 Short Questions**

**2x10 = 20**

- i. What is the effect of CO on Humans?
- ii. Differentiate between Primary and Secondary Pollutants.
- iii. What do you mean by Primary Water Treatment?
- iv. What do you mean by Ozone Hole? How it is created?
- v. Describe Lead Poisoning.
- vi. How acid rain affects the quality of buildings?
- vii. What are Point and Non-point sources of pollution?
- viii. Discuss Methane as a green house gas.
- ix. What is Reducing Smog?
- x. Give the significance of Environmental Education.

**Q.3 Extensive Questions**

**6 x 5 = 30**

- a) What is Acid Rain? Explain its Causes and Environmental impact.
- b) Explain the Environmental Consequences related to the burning of Fossil fuels.
- c) Briefly explain the Potential impact of Global Warming on the Climate Change.
- d) Discuss how Soaps and Detergents contribute Water Pollution?
- e) What are heavy metals? Explain their sources and effects on Humans
- f) Explain the Sources of Primary Pollutants in Air.



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(SUBJECTIVE TYPE)

**Q.2 Short Questions**

**2x10 = 20**

- i. What do you mean by the term Coagulation?
- ii. What is the natural source of  $\text{CH}_4$ ?
- iii. What is the significance of COD value?
- iv. Explain physical and chemical effects of aerosols.
- v. Describe some adverse effects of fertilizers in water ways.
- vi. Briefly describe Green Chemistry.
- vii. Discuss Ozone cycle in stratosphere.
- viii. Discuss any RADON as indoor pollutant.
- ix. What do you mean by the term bio-amplification?
- x. How Acid Rain affects the agricultural land?

**Q.3 Extensive Questions**

**6 x 5 = 30**

- a) Give the Potential Impact of Global Warming on the Environment?
- b) How Lead and Mercury contribute water pollution?
- c) How Oxygen Circulates in the Environment?
- d) What is Photochemical Smog? How it is formed? Give its detrimental effects
- e) What are Pesticides? Give their classification and harmful effects.
- f) How concept of green chemistry helps to protect our environment?



# UNIVERSITY OF THE PUNJAB

Seventh Semester – 2019

Examination: B.S. 4 Years Program

Roll No. ....

**PAPER: Environmental Chemistry**  
**Course Code: CHEM-401 Part – II**

**MAX. TIME: 2 Hrs. 45 Min.**  
**MAX. MARKS: 50**

**ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED**

**Q.2. Give short answers of the following questions.**

**(10x2=20)**

- i. What do you mean by the term Bioaccumulation?
- ii. Give temperature and pressure variation in Troposphere?
- iii. How COD of wastewater can be measured?
- iv. Give the Sources and Sink of oxides of Carbon in atmosphere.
- v. Discuss Radon as Indoor pollutant.
- vi. Differentiate between Primary and Secondary pollutants.
- vii. What do you mean by the term POLAR VORTEX?
- viii. How fertilizers affects the quality of waterways?
- ix. What are the harmful effect of lead in water ways?
- x. How Acid Rain affects the Masonry Buildings?

**Q.3. Give brief answers of the following questions.**

**(6x5=30)**

- a) Discuss CFC's and Methane as Green House Gases?
- b) How Heavy Metals contribute water pollution?
- c) Give various types of water pollution.
- d) Briefly explain the physical classification of Environment.
- e) Explain Activated Sludge Process.
- f) Discuss Environmental Management System (EMS)?





**UNIVERSITY OF THE PUNJAB**  
**B.S. 4 Years Program : Seventh Semester – 2020**

Paper: Environmental Chemistry  
Course Code: CHEM-401

Part – II

Roll No. ....

Time: 2 Hrs. 45 Min. Marks: 50

**ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED**

**Q.2. Give short answers of the following:**

**(10x2=20)**

- i. What do you mean by the term Bio-amplification?
- ii. How methane is transferred in air?
- iii. Why it is important to measure BOD of water?
- iv. Explain physical and chemical effects of aerosols.
- v. Excess use of fertilizers is a threat to marine life. Justify.
- vi. Define Green Chemistry. Give its significance.
- vii. How Ozone hole is created?
- viii. Describe and two Indoor Air Pollutants.
- ix. What is Environmental Management System?
- x. How Acid Rain affects the Building Materials?

**Q.3. Answer the following questions.**

**(6x5=30)**

- a) Give the mechanism of Green House and Enhanced Green House effect.
- b) How Heavy metals contribute water pollution?
- c) How Nitrogen Circulates in the Environment?
- d) What is Photochemical Smog? How it is formed? Give its detrimental effects.
- e) What are Pesticides? Give their classification and harmful effects.
- f) Give environmental consequences related to fossil fuel burning.



# UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program : Seventh Semester – Fall 2021

Roll No. ....

Paper: Environmental Chemistry

Course Code: CHEM-401

Time: 3 Hrs. Marks: 60

**Q.1. Answer the following short questions:**

**(15x2=30)**

- i. What species are responsible for the removal of hydroxyl radicle from the unpolluted atmosphere?
- ii. Briefly explain Eutrophication and its effects on marine life?
- iii. What is the use of trickling filters and biological contactors in secondary water treatment?
- iv. What are the objectives of teaching environmental chemistry?
- v. How is ozone used as disinfectant?
- vi. What do you mean by term Polar Vortex?
- vii. Briefly explain tropopause and lapse rate?
- viii. Define particulate matter. How these particulate matters can be removed from atmosphere?
- ix. How do industrial pollutants can be minimized?
- x. Discuss the impacts of modern life-style on environment?
- xi. Briefly explain smog and its effects on human?
- xii. What do you mean by aerosols? Give various sources and sinks of aerosols?
- xiii. Give sources and sinks of oxides of  $\text{NO}_x$  in atmosphere?
- xiv. How do phosphates pollute water quality?
- xv. Briefly explain acid rain and its effects on human and animals?

**Q.2. Answer the following questions.**

**(6x5=30)**

- a. List the anthropogenic and natural sources of  $\text{NO}_x$  pollution. Also discuss the effects of  $\text{NO}_x$  pollution?
- b. What are detergents? Give its classification and explain its effects on aquatic system?
- c. Give the mechanism of Green House and Enhanced Green House effect.
- d. What is temperature inversion? How does this takes place? What are the impacts of temperature inversion?
- e. Discuss Environmental Education and Environmental Degradation in detail?
- f. What is ozone depletion? What are biological consequences of ozone depletion?