

P. P. SAVANI UNIVERSITY

Third Semester of B.Sc. Examination

December-2021

SSES2010- Environment Pollution and Human Health I

07.12.2021, Tuesday Time: 09:00 a.m. to 11:30 a.m. Maximum Marks: 60

Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

Section-I (Total Marks - 30)

Q.1 Short Questions [10]

1.1 Objectives [05]

1.1a The most important indoor air pollutant is

- A SO₂
- B CO₂
- C NO₂
- D Radon Gas

1.1b Which of the following is a secondary air pollutant?

- A PAN
- B Carbon Dioxide
- C Carbon monoxide
- D Sulphur dioxide

1.1c Smog is:

- A A natural phenomenon
- B A combination of smoke and fog
- C Is colorless
- D All of the above

1.1d Byssinosis is caused by

- A Silica Dust
- B Asbestos Dust
- C Cotton dust
- D None of above

1.1e Biological oxygen demand measures:

- A Industrial Pollution
- B Air pollution
- C Dissolved O₂ needed by microbes to oxidize organic waste
- D COD

1.1f Methemoglobinemia is caused by

- A Nitrate
- B Arsenic
- C Fluoride
- D Cd²⁺

1.1g Surface water with excess algal bloom will contain excess of

- A Alkalinity
- B Carbon Dioxide
- C Nutrients
- D All of above

1.1h Which of the following is a non point source of water pollution

- A Factories
- B Sewage treatment plants
- C Urban and suburban lands
- D All of the above

1.1i Oil in water affect fish by affecting

- A Gills
- B Scales
- C Eyes
- D None of above

1.1j Activated sludge is

- A Sludge settled in humus tank
- B Aerated sludge in aerated tank
- C Sludge in secondary tank rich in microbial mass
- D Sludge rich in nutrients

1.2 Answer the Following: (MCQ/Short Question/Fill in the Blanks)

[05]

1.2a Naturally occurring water has pH in the range of _____.

1.2b In the secondary treatment process _____ waste are removed.

1.2c The condition in which DO is below 0.5 mg/l is known as _____.

1.2d Air pollutants affects plants by entering through _____.

1.2e Minamata disease occurred due to consumption of fish contaminated with _____.

Q.2 Short Notes (Attempt any two)

[06]

- A Illustrate sources and effects of different indoor air pollutants.
- B Describe London smog and its health effects.
- C Explain classical smog and photochemical smog.

Q.3 Explain in detail (Attempt any two)

[14]

- A Define pollution. Discuss effects of water pollutants on human health?
- B Enumerate various methods for control of air pollution?
- C Discuss tertiary treatment process in Effluent treatment plant?

Section-II (Total Marks - 30)

Q.1 Short Questions

[10]

1.1 Objectives

[05]

1.1a Fertilizers like ammonium sulphate, ammonium chloride and urea _____ the soil pH.

- A Stabilize
- B Increase
- C Reduce
- D None of the above

1.1b Some of the heavy metals such as cadmium are

- A Carcinogenic
- B Endocrine disruptor
- C Benign
- D Non poisonous

1.1c In Biofilter, microbes reduce pollutant concentrations by consuming and _____ pollutants.

- A Metabolizing
- B Degrading
- C Assimilating
- D Decomposing

1.1d If too much organic matter is added to water, all the available _____ is used up.

- A Hydrogen
- B Oxygen
- C Nutrients
- D None of the above

1.1e Rapid progression in eutrophication due to the presence of man and his activities is termed as

- A Cultural eutrophication
- B Accelerated eutrophication
- C Natural eutrophication
- D Geologic eutrophication

1.1f Cadmium occurs in water as

- A Cd^{2+}
- B Cd^{4+}
- C Cd^{+}
- D Cd^{8+}

1.1g If the same crop is grown again _____ levels of the nutrients can result in decreased yields

- A Increased
- B High
- C Depleted
- D Elevated

1.1h Biomagnification is the process by which _____ are passed from one trophic level to the next within a food web.

- A Toxins
- B Food
- C Energy
- D Biomass

1.1i A treatment process that uses microorganisms to break down hazardous substances into less toxic or non toxic substances is termed as

- A Bioremediation
- B Biodegradation
- C Bioventing
- D None of the above

1.1j The goal of land farming is to stimulate _____ micro organisms and aerobic degradation of contaminants.

- A Indigeneous
- B Local
- C Native
- D Exotic

1.2 Answer the Following: (MCQ/Short Question/Fill in the Blanks) [05]

1.2a Any undesirable change in the physical, chemical and biological properties of soil that causes harmful effect on living biota is known as _____.

1.2b Industrial workers who are exposed to noise for _____ hours per day and 6 days per week suffer from occupational noise pollution.

1.2c Impulsive noise may cause psychological disorders. (True/False)

1.2d Biosparging is not confined to the unsaturated zone, but rather extends remediation to the saturated zone of the soil matrix. (True/False)

1.2e Irrigated lands can produce higher crop yields than those that only use rainwater. (True/False)

Q.2 Short Notes (Attempt any two) [06]

A What are the environmental effects of air pollution?

B Explain effects of soil pollution.

C What are various noise control procedures?

Q.3 Explain in detail (Attempt any two) [14]

A Discuss control strategies of soil pollution.

B Explain mechanism of Eutrophication.

C Describe effects of noise pollution.