NOT FOR BREATHING AND NOT FOR DRINKING

TEACHING TASK (Page 69 – 72)

NEET LEVEL QUESTIONS

Multiple Choice Questions

1) What is pollution?

Answer: B) Introduction of harmful substances or energy into the environment

Explanation: Pollution is defined as the introduction of harmful substances or energy (e.g., chemicals, heat, or noise) into the environment, which disrupts its natural balance and causes adverse effects.

2) Which gases make up the majority of the Earth's atmosphere?

Answer: A) Nitrogen and oxygen

Explanation: The Earth's atmosphere is primarily composed of nitrogen (approximately 78%) and oxygen (approximately 21%), making up the majority of its composition.

3) What is the primary role of oxygen in the atmosphere?

Answer: A) To support combustion

Explanation: Oxygen is essential for combustion processes, as it acts as an oxidizer in burning. While it also supports respiration, the question emphasizes its role in combustion.

4) What is considered an air pollutant?

Answer: C) Substances that disrupt the natural balance of the air

Explanation: Air pollutants are substances that alter the natural composition of the atmosphere, causing harm to living organisms or the environment.

5) Which of the following is NOT a type of air pollutant?

Answer: D) Tertiary pollutants

Explanation: Air pollutants are classified as primary (directly emitted) and secondary (formed through reactions). Tertiary pollutants are not a recognized category.

6) What was the cause of the Chernobyl disaster?

Answer: C) Nuclear power reactor meltdown

Explanation: The Chernobyl disaster (1986) was caused by a nuclear reactor meltdown, releasing radioactive pollutants into the environment.

7) What is the primary source of pollutants in the atmosphere from human activities?

Answer: D) Burning of fossil fuels

Explanation: Burning fossil fuels (e.g., coal, oil, and gas) is a major human activity contributing to air pollution through emissions of CO_2, SO_2, and other pollutants.

8) How does hydrogen sulfide affect the environment?

Answer: B) It causes headaches when inhaled

Explanation: Hydrogen sulfide (H_2S) is toxic and can cause health issues like headaches when inhaled in large quantities. It does not directly contribute to ozone depletion.

9) Which pollutant forms carboxyhemoglobin when combined with hemoglobin in the blood?

Answer: B) Carbon monoxide

Explanation: Carbon monoxide (CO) binds with hemoglobin to form carboxyhemoglobin, reducing the blood's ability to carry oxygen, leading to health issues.

10) What is a significant environmental impact of air pollution on historical monuments?

Answer: C) Deterioration of surfaces

Explanation: Air pollutants like sulfur dioxide and particulate matter cause acid rain and physical damage, leading to the deterioration of historical monument surfaces.

NEET Advanced Level Questions

More than One Answer Type

11) Which human activities are listed as sources of air pollution?

Answer: A) Burning fuels, B) Emissions from vehicles, C) Nuclear power plant accidents

Explanation: Burning fuels and vehicle emissions release pollutants like CO_2 and CO. Nuclear accidents, like Chernobyl, release radioactive pollutants. Recycling efforts (D) reduce pollution, not cause it.

12) What are the effects of air pollution on human health mentioned in the text?

Answer: A) Shortness of breath, B) Lung cancer

Explanation: The text lists shortness of breath and lung cancer as health effects of air pollution. High blood pressure (C) and improved respiratory function (D) are not mentioned.

13) Which pollutants mentioned in the text contribute to respiratory diseases?

Answer: A) Particulate matter, B) Hydrogen sulfide, C) Carbon monoxide, D) Ozone

Explanation: All listed pollutants (particulate matter, H_2S, CO, and ozone) are known to contribute to respiratory issues, as they irritate or damage the respiratory system.

Reason and Assertion Type

14) Reason: Air pollution has significant negative effects on human health.

Assertion: Air pollution can lead to diseases like shortness of breath, sore throat, chest pain, nausea, asthma, bronchitis, and lung cancer.

Answer: A) Assertion & Reason are true & Reason Explains Assertion

Explanation: The assertion lists specific health effects caused by air pollution, and the reason correctly states the general negative impact on health, supporting the assertion.

15) Reason: Particulate matter in the air affects plant leaves, altering the rate of photosynthesis and transpiration.

Assertion: Particulate matter contributes to respiratory diseases like bronchitis and asthma.

Answer: B) Assertion & Reason are true & Reason doesn't Explain Assertion

Explanation: Both statements are true: particulate matter affects plant processes and causes respiratory diseases. However, the reason (effect on plants) does not explain the assertion (effect on human health).

16) Reason: Hydrogen sulfide gas tarnishes silver objects and blackens lead paints.

Assertion: Hydrogen sulfide has a distinctive smell similar to rotten eggs and can cause headaches when inhaled in large quantities.

Answer: B) Assertion & Reason are true & Reason doesn't Explain Assertion

Explanation: Both statements are true, but the reason (chemical effects on silver and paint) does not explain the assertion (health effects and smell of H_2S).

Matrix Matching Type

17) Match the method to reduce air pollution with its corresponding action:

Answer:

Industrial Measures – D. Installing tall chimneys in factories

Vehicle Regulations – C. Using non-polluting fuels like CNG and LPG

Promotion of Renewable Energy – A. Utilizing solar, wind, and hydro energy

Afforestation Efforts – B. Planting and nurturing more trees

Explanation:

Industrial measures like tall chimneys (D) reduce ground-level pollution.

Vehicle regulations include using cleaner fuels like CNG and LPG (C).

Renewable energy promotion involves solar, wind, and hydro energy (A).

Afforestation (B) absorbs CO_2 and pollutants through trees.

Comprehension Type

18) Significance of Oxygen and Carbon Dioxide

1) What percentage of the atmosphere is composed of oxygen?

Answer: A) 21%

Explanation: The passage states that oxygen comprises approximately 21% of the atmosphere.

2) What is the primary role of carbon dioxide in photosynthesis?

Answer: D) Serving as a raw material for glucose production

Explanation: Carbon dioxide is a key input in photosynthesis, where plants use it, along with water and sunlight, to produce glucose and oxygen.

3) Which process is oxygen essential for besides sustaining life?

Answer: B) Combustion

Explanation: The passage highlights oxygen's role in combustion processes, essential for energy production and industrial activities.

LEARNERS TASK (Page 72 – 75)

NEET LEVEL QUESTIONS

Multiple Choice Questions

1) Which measure helps reduce industrial pollution?

Answer: D) Using electrostatic precipitators

Explanation: Electrostatic precipitators remove particulate matter from industrial emissions, reducing air pollution. Tall chimneys (A) disperse pollutants, not reduce them.

2) What is a renewable energy source mentioned as a method to reduce air pollution?

Answer: C) Solar energy

Explanation: Solar energy is a renewable, non-polluting energy source that reduces reliance on fossil fuels, unlike coal or diesel.

3) Which vehicle regulation method helps minimize emissions?

Answer: A) Using unleaded petrol

Explanation: Unleaded petrol reduces harmful emissions like lead, which is toxic to the environment and health.

4) What is a crucial step in promoting renewable energy?

Answer: C) Utilizing solar, wind, and hydro energy

Explanation: Using renewable energy sources like solar, wind, and hydro reduces pollution by replacing fossil fuels.

5) What is the primary role of afforestation in reducing air pollution?

Answer: C) Absorbing pollutants from the air

Explanation: Trees absorb CO_2 and other pollutants, improving air quality and reducing pollution levels.

6) What is the primary purpose of installing electrostatic precipitators in chimneys?

Answer: C) To improve fuel quality

Explanation: Electrostatic precipitators remove particulate matter from emissions, effectively improving the quality of emitted gases, not fuel quality itself. (Note: The correct answer in the options seems misaligned; the intended answer is likely "to control emissions.")

7) Which gas is commonly emitted by power generation plants?

Answer: C) Carbon dioxide

Explanation: Power plants, especially those using fossil fuels, primarily emit carbon dioxide (CO_2) as a byproduct.

8) What is a significant environmental effect of carbon monoxide pollution?

Answer: D) Prevention of oxygen transportation in the blood

Explanation: Carbon monoxide binds with hemoglobin, forming carboxyhemoglobin, which inhibits oxygen transport, causing health issues.

9) Which activity is NOT a contributor to air pollution?

Answer: C) Planting trees

Explanation: Planting trees (afforestation) reduces air pollution by absorbing CO_2, unlike deforestation, burning fossil fuels, or using CFCs.

10) What is the primary aim of vehicle maintenance to reduce emissions?

Answer: C) To ensure compliance with pollution norms

Explanation: Regular vehicle maintenance ensures engines run efficiently, reducing emissions and complying with pollution regulations.

NEET Advanced Level Questions

More than One Answer Type

11) Which gases are mentioned as components of the atmosphere in the text?

Answer: A) Nitrogen, B) Oxygen, C) Argon

Explanation: Nitrogen, oxygen, and argon are major components of the atmosphere. Carbon monoxide (D) is a pollutant, not a natural component.

12) What are the types of pollutants mentioned in the text?

Answer: A) Primary pollutants, B) Secondary pollutants

Explanation: The text mentions primary (directly emitted) and secondary (formed through reactions) pollutants. Tertiary and quaternary pollutants are not recognized categories.

13) What are the natural activities contributing to air pollution?

Answer: A) Forest fires, B) Volcanic eruptions, C) Decaying organic matter

Explanation: These natural activities release pollutants like ash, gases, and volatile organic compounds. Vehicle emissions (D) are human-induced.

Reason and Assertion Type

14) Reason: Carbon monoxide forms a stable compound called carboxyhemoglobin when it combines with hemoglobin in the blood.

Assertion: Carboxyhemoglobin prevents oxygen from being transported to various parts of the body, leading to respiratory problems, suffocation, and even death.

Answer: A) Assertion & Reason are true & Reason Explains Assertion

Explanation: The reason explains how CO forms carboxyhemoglobin, which directly causes the health effects described in the assertion.

15) Reason: Air pollution contributes to ozone depletion, the greenhouse effect, global warming, and acid rain.

Assertion: These environmental impacts exacerbate broader environmental issues.

Answer: A) Assertion & Reason are true & Reason Explains Assertion

Explanation: The reason lists specific environmental impacts of air pollution, which support the assertion's claim about broader environmental issues.

16) Reason: Vehicle emissions and industrial activities have led to the deterioration of the Taj Mahal's pristine white marble surface.

Assertion: Prohibiting vehicular traffic and promoting eco-friendly modes of transportation around the Taj Mahal help preserve the monument.

Answer: A) Assertion & Reason are true & Reason Explains Assertion

Explanation: The reason explains why the Taj Mahal is deteriorating (due to pollution), and the assertion describes measures to mitigate this, directly linked to the reason.

Matrix Matching Type

17) Match the air pollutant with its associated effect:

Answer:

Particulate Matter – C. Impacts plant photosynthesis and transpiration

Hydrogen Sulphide – A. Causes headache and respiratory irritation

Carbon Monoxide – D. Forms carboxyhemoglobin, leading to suffocation

Lead Oxide – B. Causes brain damage and anemia

Explanation:

Particulate matter (C) affects plant processes by coating leaves.

Hydrogen sulfide (A) causes health issues like headaches.

Carbon monoxide (D) forms carboxyhemoglobin, causing suffocation.

Lead oxide (B) is toxic, leading to brain damage and anemia.

Comprehension Type

18) Impact of Pollution on Health

1) What analogy is used to describe the effect of pollution on the environment?

Answer: C) A domino effect

Explanation: The passage likens pollution's environmental impact to a cascade of problems, similar to a domino effect.

2) Which of the following is NOT mentioned as being harmed by pollution in the passage?

Answer: D) Oceans

Explanation: The passage mentions harm to plants, animals, and humans but does not explicitly mention oceans.

3) How does pollution impact the health of living organisms?

Answer: C) It severely impacts their health

Explanation: The passage states that pollution disrupts the environment, posing a significant threat to the health of all living organisms.

TEACHING TASK (Page 79 – 83)

NEET Level Questions

1) What is the process by which excess chemical fertilizers promote algae growth in water bodies?

Answer: B) Eutrophication

Explanation: Eutrophication occurs when excess nutrients (e.g., from fertilizers) promote algae growth, leading to oxygen depletion in water bodies.

2) What is a consequence of heat pollution in water bodies?

Answer: A) Decreased oxygen levels

Explanation: Heat pollution raises water temperatures, reducing dissolved oxygen levels, which harms aquatic life.

3) Which activity contributes to sediment pollution in water bodies?

Answer: B) Construction

Explanation: Construction activities cause soil erosion, leading to sediment pollution that increases turbidity in water bodies.

4) What type of substances improperly disposed of can lead to toxicity in water sources?

Answer: C) Hazardous chemicals

Explanation: Hazardous chemicals, when improperly disposed of, contaminate water sources, causing toxicity to aquatic life and humans.

5) How can industrial wastes be controlled to prevent water pollution?

Answer: B) Proper chemical treatment before discharge

Explanation: Treating industrial wastes chemically neutralizes harmful substances, preventing water pollution.

6) What is the purpose of sewage management in preventing water pollution?

Answer: C) Remove harmful substances from sewage

Explanation: Sewage management involves treating sewage to remove harmful substances, preventing contamination of water bodies.

7) How can chemical usage be reduced to minimize water pollution?

Answer: B) Opt for biodegradable alternatives

Explanation: Using biodegradable alternatives reduces the environmental impact of chemicals, minimizing water pollution.

8) What is a recommended method for proper waste disposal to prevent water pollution?

Answer: B) Using biogas plants for waste treatment

Explanation: Biogas plants treat organic waste, preventing it from polluting water bodies, unlike dumping garbage into rivers.

9) What government-led initiative is mentioned to combat water pollution?

Answer: C) Ganga Action Plan

Explanation: The Ganga Action Plan is a specific initiative aimed at cleaning the Ganga River by reducing pollution.

10) What is the purpose of afforestation in preventing water pollution?

Answer: C) Prevent soil erosion and filter pollutants

Explanation: Afforestation stabilizes soil, preventing erosion, and trees filter pollutants, improving water quality.

NEET Advanced Level Questions

More than One Answer Type

11) How cannot afforestation contribute to preventing water pollution?

Answer: A) By increasing chemical usage, B) By promoting soil erosion, D) By decreasing biodiversity

Explanation: Afforestation prevents soil erosion and filters pollutants (C), but it does not increase chemical usage, promote erosion, or decrease biodiversity.

12) What role does not public awareness play in preventing water pollution?

Answer: A) Encouraging irresponsible waste disposal practices, C) Advocating for increased chemical usage

Explanation: Public awareness promotes sustainable practices (B), not irresponsible disposal or increased chemical use.

13) What is not recommended to reduce chemical usage and minimize water pollution?]

Answer: A) Excessive use of fertilizers and pesticides, C) Increasing synthetic detergent usage, D) Disposing of chemicals directly into water bodies

Explanation: These actions increase pollution, while opting for biodegradable alternatives (B) is recommended.

Reason and Assertion Type

14) Reason: Water pollutants can be categorized into several types, including biodegradable waste, plant nutrients, and hazardous chemicals.

Assertion: Pharmaceutical pollution mainly consists of human and animal waste, providing energy for bacteria, leading to oxygen depletion in water bodies.

Answer: C) Assertion is true Reason is false

Explanation: The reason is false because pharmaceutical pollution primarily involves drugs and chemicals, not human/animal waste. The assertion is true as waste can lead to oxygen depletion.

15) Reason: Treatment of industrial wastes involves chemical treatment to neutralize harmful substances before discharge into rivers and lakes.

Assertion: Sewage management primarily focuses on treating sewage at sewage treatment plants to remove organic matter, turning it into useful manure.

Answer: B) Assertion & Reason are true & Reason doesn't Explain Assertion

Explanation: Both statements are true, but the reason (industrial waste treatment) does not explain the assertion (sewage management).

16) Reason: Government-led purification efforts like the Ganga Action Plan can help clean up water bodies.

Assertion: Afforestation plays a minimal role in preventing soil erosion and filtering pollutants from water bodies.

Answer: C) Assertion is true Reason is false

Explanation: The reason is true, but the assertion is false because afforestation plays a significant role in preventing soil erosion and filtering pollutants.

Matrix Matching Type

17) Match the prevention and control measure with its corresponding action:

Answer:

Treatment of Industrial Wastes – C. Chemical treatment of toxic industrial wastes neutralizes harmful substances before discharge.

Sewage Management – D. Sewage treatment at treatment plants to remove organic matter and turn it into useful manure.

Reducing Chemical Usage – B. Avoid excessive use of fertilizers, pesticides, and synthetic detergents.

Proper Waste Disposal – A. Avoid dumping garbage into rivers and utilize biogas plants for waste treatment.

Explanation: Each measure is matched with its specific action to prevent water pollution.

Comprehension Type

18) The 4R's Approach to Waste Management

1) What is the first step in the 4R's approach to waste management?

Answer: C) Reduce

Explanation: The passage states that reducing waste generation is the first step in the 4R's approach.

2) What does the principle of "reuse" in the 4R's approach emphasize?

Answer: B) Finding alternative uses for items instead of discarding them

Explanation: Reuse involves extending the lifespan of items by repurposing or repairing them, as described in the passage.

3) Which technique involves converting organic waste into energy or nutrient-rich compost?

Answer: B) Recovery

Explanation: Recovery includes processes like anaerobic digestion and composting to convert waste into energy or compost.

LEARNERS TASK (Page 83 – 87)

NEET Level Questions

1) What is water pollution?

Answer: B) Disruption of the natural balance of water by harmful substances

Explanation: Water pollution involves the introduction of harmful substances that disrupt the natural balance of water bodies, affecting their quality.

2) Which river is mentioned as a case study for water pollution?

Answer: C) Ganga River

Explanation: The Ganga River is specifically mentioned as a case study for water pollution, with initiatives like the Ganga Action Plan.

3) What is the main consequence of water pollution?

Answer: C) Contamination of water sources

Explanation: The primary consequence of water pollution is the contamination of water bodies, making them unsuitable for use.

4) What are definite sources of water pollution?

Answer: B) Sources that release pollutants directly into water bodies

Explanation: Definite sources, like industrial discharge and sewage, directly release pollutants into water bodies.

5) Which type of water pollutant originates from human and animal waste?

Answer: C) Biodegradable waste

Explanation: Human and animal waste is biodegradable, contributing to water pollution by increasing organic matter.

6) What is a crucial aspect of public awareness in preventing water pollution?

Answer: C) Educating about harmful effects of water pollution

Explanation: Public awareness educates people about pollution's harmful effects, encouraging responsible practices.

7) What does the 4R's principle stand for in the context of water pollution prevention?

Answer: C) Reduce, Reuse, Recycle, Recover

Explanation: The 4R's (Reduce, Reuse, Recycle, Recover) is a framework for minimizing waste and pollution.

8) What is the primary purpose of the 4R's principle?

Answer: D) Minimize waste generation and maximize resource efficiency

Explanation: The 4R's aim to reduce waste and promote efficient use of resources to prevent pollution.

9) What is the significance of preserving natural resources in preventing water pollution?

Answer: B) Decrease environmental impact

Explanation: Preserving resources reduces pollution, minimizing the environmental impact on water bodies.

10) Which measure is NOT effective in preventing water pollution?

Answer: C) Increasing chemical usage

Explanation: Increasing chemical usage exacerbates water pollution, unlike afforestation, proper waste disposal, and government initiatives.

NEET Advanced Level Questions

More than One Answer Type

11) What are the consequences of water pollution mentioned in the text?

Answer: A) Contamination of water with sewage, B) Decreased biodiversity, C) Unsuitability of water for drinking

Explanation: These are direct consequences of water pollution. Increased oxygen levels (D) is not a consequence.

12) What are the categories of water pollutants mentioned in the text?

Answer: A) Biodegradable waste, B) Pharmaceuticals, C) Heat pollution

Explanation: The text mentions these categories. Radioactive waste (D) is not explicitly mentioned.

13) How can water pollution be prevented or controlled according to the text?

Answer: A) Treatment of industrial wastes, B) Sewage management

Explanation: These are effective measures. Increasing chemical usage (C) and improper waste disposal (D) worsen pollution.

Reason and Assertion Type

14) Reason: Water pollution has become a significant hazard due to irresponsible human actions and greed.

Assertion: Human activities, such as industrial waste disposal and improper garbage management, are major contributors to water pollution.

Answer: A) Assertion & Reason are true & Reason Explains Assertion

Explanation: The reason explains why human activities (assertion) cause water pollution.

15) Reason: Water pollution leads to the contamination of water with substances like sewage, chemicals, and industrial waste, rendering it unsuitable for drinking and other uses.

Assertion: Efforts like the 'Musi Reservoir Action Plan Project' aim to reduce pollution through measures such as waste management, sewage treatment, and public awareness campaigns.

Answer: B) Assertion & Reason are true & Reason doesn't Explain Assertion

Explanation: Both statements are true, but the reason (general effects of pollution) does not directly explain the assertion (specific project efforts).

16) Reason: Sediment pollution originates from activities like construction, logging, and urban runoff, causing turbidity and clogging municipal systems.

Assertion: Heat pollution results from increased water temperatures due to industrial discharge or natural causes, affecting aquatic life's oxygen levels and biodiversity.

Answer: B) Assertion & Reason are true & Reason doesn't Explain Assertion

Explanation: Both statements are true, but sediment pollution (reason) does not explain heat pollution (assertion).

Matrix Matching Type

17) Match the water pollutant category with its corresponding description:

Answer:

Biodegradable Waste – C. Decomposition process consumes oxygen, leading to oxygen depletion in water bodies.

Plant Nutrients – A. Chemical fertilizers runoff into water sources, promoting algae growth and depleting oxygen.

Heat Pollution – D. Increased water temperatures affect aquatic life's oxygen levels and biodiversity.

Sediment Pollution – B. Solid matter washed from land into water bodies, causing turbidity and clogging municipal systems.

Explanation: Each pollutant is matched with its specific environmental impact.

Comprehension Type

18) Water Pollution and Its Impact

1) What are some common sources of water pollution?

Answer: D) All of the above

Explanation: The passage lists industrial discharge, agricultural runoff, and improper waste disposal as sources of water pollution.

2) How does water pollution affect human health?

Answer: C) Both A and B

Explanation: The passage mentions waterborne diseases (A) and increased cancer risk (B) as health effects of water pollution.

3) What are some economic consequences of water pollution?

Answer: A) Impairment of agriculture and fishing industries

Explanation: The passage highlights economic impacts on agriculture and fishing, but B and C are environmental, not economic, consequences.