

Assignment- 1

TYPE OF QUESTION: MCQ/MSQ

Number of questions: 15

Total Marks $15 \times 2 = 30$

1.

How many 60 Watt Incandescent lamps are equivalent to three 15 Watt CFL (69)

- a. 7
- b. 22
- c. 10
- d. 21

Correct Answer:- b

Detailed Solution:



2.

Which of the following is a major greenhouse gas responsible for global warming?

- a. Carbon dioxide (CO_2)
- b. Hydrogen sulphide (H_2S)
- c. Carbon monoxide (CO)
- d. Oxygen (O_2)

Correct Answer:- a

Detailed Solution:

- The U.S. Environmental Protection Agency and the U.S. National Academy of Sciences release reports concluding that the build-up of carbon dioxide and other "**greenhouse gases**" in the Earth's atmosphere will likely lead to global warming.

3.

One of the most famous and important examples of groundwater pollution in New York state (USA) is the _____.

- a. Chernobyl Accident
- b. Donora smog
- c. Cuyahoga River fire
- d. Love canal tragedy


Correct Answer:- d

Detailed Solution:

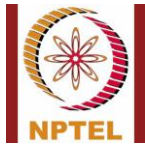
The Love Canal Tragedy

One of the most famous and important examples of groundwater pollution in the U.S. is the **Love Canal tragedy** in Niagara Falls, New York.

1980 :Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), better known as the Superfund Act. Love Canal became the first entry on the list



<https://blogs.roosevelt.edu/mbryson/2013/12/01/love-canal-a-toxic-waste-community-disaster/>



4.

The effect of a defined population on the environment, including land, water and other resources is termed as_____.

- a. Ecological Fingerprint
- b. Ecological History
- c. Ecological Footprint
- d. Sustainability

Correct Answer:- c

Detailed Solution:

Ecological Footprint

Ecological Footprint - the amount of land area and water required to produce sustainably the resources or ecological services needed to support a defined population at a set standard of living

- Vancouver - population 1.7 million
ecological footprint - 19 times its area
- Netherland - 14 times its area
- Australia has one of the highest footprints at 6.25ha/person

http://www.wwf.org.au/our_work/people_and_the_environment/human_footprint/footprint_calculator/

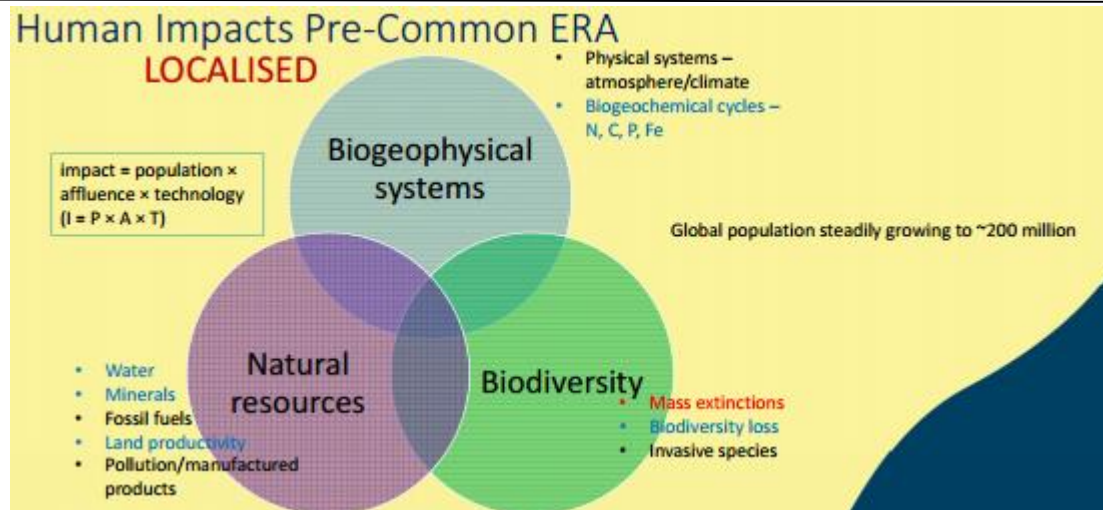
5.

Human impacts on the environmental system can be calculated by which of the following equation?

- a. $\text{Population} \times \text{Affluence} \times \text{Time}$
- b. $\text{Population} \times \text{Affluence} \times \text{Temperature}$
- c. $\text{Population} \times \text{Affluence} \times \text{Technology}$
- d. $\text{Population} \times \text{Poverty} \times \text{Technology}$

Correct Answer:- c

Detailed Solution:



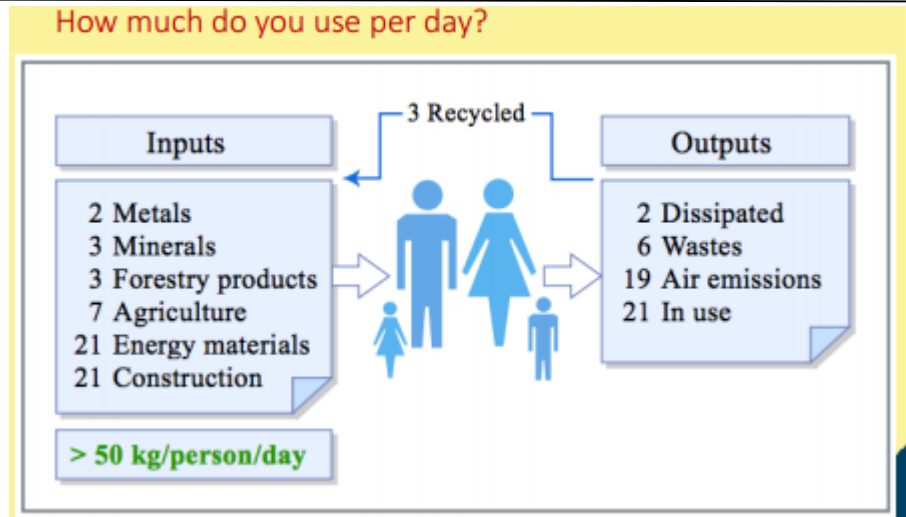
6.

How much input of resources is required per person per day on average?

- a. 60 Kg
- b. 100 Kg
- c. 40 Kg
- d. 50 Kg

Correct Answer:- d

Detailed Solution:



7.

Sustainable development is _____.

- Meeting the present needs with compromising the ability of future generations
- Meeting the present needs without compromising the ability of future generations
- Using the material and resources at maximum levels
- None of these

Correct Answer:- b

Detailed Solution:

Defining Sustainability

- Sustainability**
 Merriam –Webster definition: (1) of , relating to , or being a method of harvesting or using a resource so that the resource is not depleted or permanently damaged.
- Sustainable Development**
 Brundtland Commission: Development which meets the needs of the present without compromising the ability of the future to meets its needs.
- Sustainable Engineering** : Design of human and industrial systems to ensure that human that humankind's use of natural resources and cycles do no lead to diminished quality of life due to either to losses in future economic opportunities or to adverse impacts on social condition, human health and the environment.

8.

Match the correct options:

1. MDG 2	A. Improve maternal health
2. MDG 6	B. Global partnership for development
3. MDG 5	C. Combat diseases
4. MDG 8	D. Universal primary education

- a. 1-A, 2-B, 3-C, 4-D
- b. 1-B, 2-A, 3-D, 4-C
- c. 1-D, 2-C, 3-A, 4-B
- d. 1-C, 2-D, 3-B, 4-A

Correct Answer:- c

Detailed Solution:



9.

The most effective management intervention of water and health are _____.


- a. Provision of safe drinking water and improper disposal of human waste
- b. No provision of safe drinking water and proper disposal of human waste
- c. Provision of safe drinking water and proper disposal of human waste
- d. No provision of safe drinking water and improper disposal of human waste

Correct Answer:- c

Detailed Solution:

Water and Health

- 80% of diseases in developing countries are due to the lack of access to clean potable water
- Pathogens transmitted through water
 - Kill 25 million people every year by amoeba linked diarrhea, cholera, and typhoid
 - ~3,900 children die EVERY DAY (WHO, 2004)
- 90% of 2.2 million deaths of children under 5
- The most effective management intervention
 - Providing safe drinking water and proper disposal of human waste



10.


Which gas is responsible for Bhopal Gas Tragedy (1984)?

- a. Ethyl Isocyanate
- b. Methyl Isocyanide
- c. Hydrogen Cyanide
- d. Methyl Isocyanate

Correct Answer:- d

Detailed Solution:

- **1984**
 - An estimated 10,000 people are killed and many more injured when Union Carbide's pesticide plant in Bhopal, India, leaks 40 tons of methyl isocyanate gas into the air and sends a cloud of poison into the surrounding city of 1 million.



Select all the correct answers

11.

Identify the correct statement/statements regarding the Resource Conservation and Recovery Act (RCRA).

- a. It was enacted by Congress in 1978.
- b. The primary goal of the act is to protect human health and the environment from the potential hazards of waste disposal, conserving energy and natural resources.
- c. It focuses on waste management in the environment.
- d. It focuses on waste maximization in the environment.

Correct Answer:- b,c

Detailed Solution:

1976 : The Resource Conservation and Recovery Act (RCRA) is enacted by Congress



-with primary goals of protecting human health and the environment from the potential hazards of waste disposal, conserving energy and natural resources, reducing the amount of waste generated, and ensuring that wastes are managed in an environmentally sound manner.

12.

Sustainable development is an integration of which of the following elements:

- a. Environment
- b. Society
- c. Energy
- d. Economy

Correct answer:- a,b,d

Detailed Solution:

Defining Sustainability

- If you Google a word sustainability or sustainable development all of the definition refer to integrating the three elements of the triple bottom line (Environment, Economy and Society).

Environment

- Materials
- Biodiversity
- Energy
- Biophysical interactions

Economy

- Money and capital
- Employment
- Technological growth
- Investment
- Market forces



Society

- Human diversity (cultural, linguistic, ethnic)
- Equity (dependence / independence)
- Quality of life
- Institutional structures and organization
- Political structures

13.

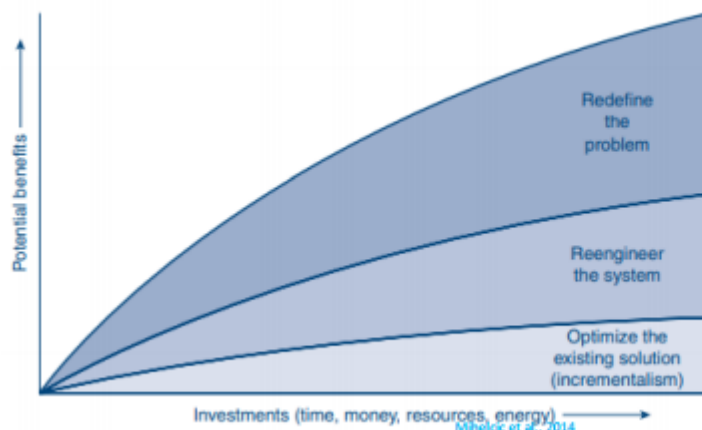
What is the potential benefit of design and innovation in advanced sustainability?

- Existing solution can be optimized
- The problem can be redefined
- The existing system can be interrupted
- A new system can be corrupted

Correct Answer:- a, b

Detailed Solution:

Importance of design and innovation in advance sustainability



- Design is the engineering stage where the greatest influence can be achieved in terms of sustainable outcomes.

Which of the following statements is/are correct?

- Systems thinking is the process of understanding how things influence one another within a whole
- In the circular economy, materials flow in a linear system
- Without LifeCycle and system thinking frameworks, significant and varied environmental impacts across the life cycle cannot be understood
- In the circular economy, materials flow in a closed-loop system

Correct Answer:- a, c, d

Detailed Solution:

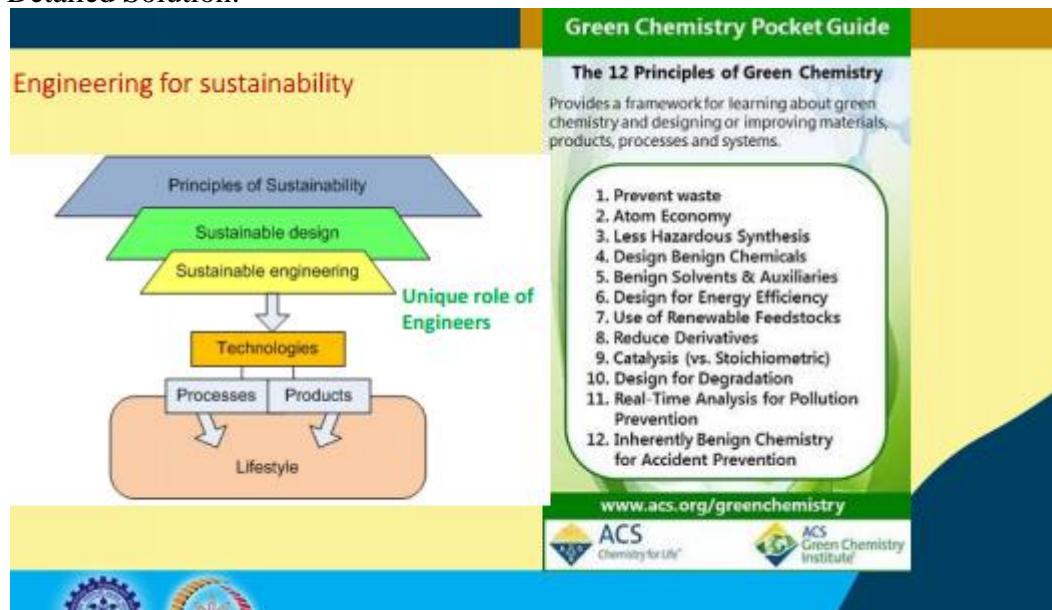


Which of the following is a principle of Green Chemistry?

- Increased use of derivatives
- Use of Renewable feedstock
- Overdue analysis for pollution prevention
- Less hazardous synthesis

Correct Answer:- b, d

Detailed Solution:



*****END*****