



Thursday, 8<sup>th</sup> February 2024

**Subject: Physics**

**Q.No.1 Answer the following Short questions.**

- How fission reaction is controlled?
- What is Fusion reaction? Write its equation.
- What are the hazards of electricity? Write any four.
- What are the safety measures of Radioactive materials?
- What are radioactive tracers.? Write any two.

**Q.No.2 Answer the Extensive questions.**

- Explain the Fission reaction? Draw the diagram of Fission chain reaction.
- Do the Exercise Numerical problem 18.3 and 18.5.

**Subject: Chemistry**

Topic: Lewis concept of acids and bases

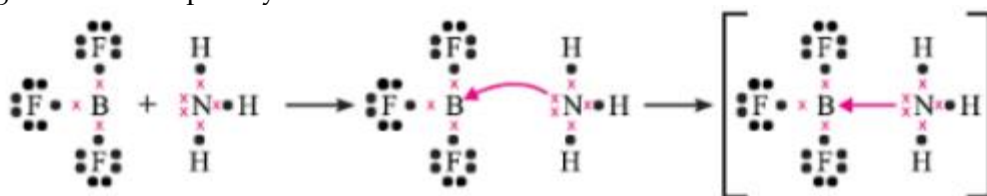
Lewis Concept of Acids and Bases:

The Arrhenius and Bronsted-Lowry concepts of acids and bases are limited to substances which contain protons.

G.N. Lewis (1923) proposed a more general and broader concept of acids and bases. According to this concept:

An acid is a substance (molecule or ion) which can accept a pair of electrons, while a base is a substance (molecule or ion) which can donate a pair of electrons.

For example, a reaction between ammonia and boron trifluoride takes place by forming a coordinate covalent bond between ammonia and boron trifluoride by donating an electron pair of ammonia and accepting that electron pair by boron trifluoride.



The cations (proton itself or metal ions) act as Lewis acids. For example, a reaction between H and NH<sub>3</sub>, where H acts as an acid and ammonia as a base.



## **Subject: Biology**

### **Lesson**

#### **Chapter no: 16 Man and his environment**

This lesson is about the levels of Ecosystem balance and human impact.

#### **A: Inquiry:**

“Everyone knows” that the interactions among organisms and between organisms and the abiotic components of their environment produce steady and balanced ecosystems. Do you know about the Global Warming and acid rain effects on environment?

#### **B: Information**

##### **Ecosystem Balance And Human Impact**

The interactions among organisms and between organisms and the abiotic components of their environment produce steady and balanced ecosystems. Biogeochemical cycles also maintain the balance in ecosystems by recycling natural resources, so that they do not deplete.

##### **1. Global Warming**

The addition of greenhouse gases (e.g. carbon dioxide, methane, ozone) in atmosphere increases the temperature of the Earth. These gases remain in the lowest part of Earth’s atmosphere and do not allow solar radiations to reflect back into space. As a result, heat remains within the Earth’s atmosphere and increases its temperature. This is called global warming. Due to global warming, polar ice-caps and glaciers are melting faster than the time taken for new ice layers to form. Sea water is also expanding causing sea levels to rise. Due to melting glaciers, rivers overflow and cause floods.

##### **Greenhouse Effect**

The term ‘Greenhouse Effect’ refers to the phenomenon in which certain gases (called greenhouse gases) trap heat in the atmosphere. These gases act like the glass in a greenhouse, which does not allow the inner heat to escape. When sunlight reaches the surface of the Earth, much of its energy is transformed into heat energy. The greenhouse gases trap infrared radiation and send it back to Earth. Carbon dioxide, methane and nitrous oxide are important greenhouse gases.

##### **Acid Rain**

When rain falls through polluted air, it comes across chemicals such as oxides of sulphur and nitrogen. These chemicals interact with water vapours in the presence of sunlight to form sulphuric acid and nitric acid. These acids remain as vapour at high temperatures. As temperature falls, the acids begin to condense into liquid form and mix with rain or snow, on the way down to the Earth. This makes rain acidic with pH range of 3 to 6. Some of the significant ill effects of acid rain are:

- Acid rain destroys the necessary nutrients present in the waters of rivers and lakes etc. Its also lowers the pH of water. Most of the aquatic animals cannot survive at this pH.
- Acid rain washes nutrients out of soil, damages the bark and leaves of trees and harms root hairs. Leaf pigments (chlorophyll) are also destroyed.
- Building materials such as limestone, marble, dolomite, mortar and slate are weakened with acid rains because of the formation of soluble compounds. Thus, acid rain is dangerous for historical monuments. The building of famous Taj Mahal has been corroded at many places, due to acid rains.



Figure 16.17: Taj Mahal and its corroded door

## Deforestation

Deforestation means clearing of forests by natural causes or humans. Large areas of forests have been cleared for agriculture, factories, roads, rail tracks and mining. Humans cut trees for getting wood (lumber), which is then used for making structures and for heat production. Humans prey upon forest animals, which are the predators of many insect pests. In this way, insect pests destroy forests by eating the shoots and spreading diseases. The effects of deforestation include floods, droughts, landslides and soil erosions, global warming and loss of habitat of many species.

## Overpopulation

When the industrial revolution started some 250 years ago, the world population was at 600 million - that seems like a lot of people but now the world population is almost ten times at 6 billion and will grow to 8 billion by 2025. Better health facilities and lowered mortality rates have contributed in population growth.

## Pollution; Consequences and Control

For better life, human society is becoming more and more dependent on technology and industries. Technology and industry are making life easier and convenient for humans but are also contributing towards the pollution of environment. Pollution is defined as any undesirable change in the physical, chemical or biological characteristics of air, water and land that may harmfully affect living organisms and natural resources.

### 1. Air Pollution

Air pollution is one of the major environmental issues of today. It is defined as the change of composition of air by the addition of harmful substances (e.g. industrial and automobile gases and particulate matter). All sources of air pollution are related to human activities. Burning of coal produces a lot of smoke and dust whereas burning of petroleum produces sulphur dioxide. In addition to these, air pollutants include carbon monoxide, carbon dioxide, nitrogen oxides, hydrocarbons, particulate matter and traces of metals. Different industries produce air pollution in the following way.

#### Effects of Air Pollution

We have studied that global warming is one of the consequences of air pollution. Other effects of air pollution are as follows.

#### Smog formation:

When pollutants like hydrocarbons and nitrogen oxides combine in the presence of sunlight, smog is formed. This is a mixture of gases. It forms a yellowish brown haze especially during winter and hampers visibility. It also causes many respiratory disorders and allergies as it contains polluting gases.

#### Acid rains:

The air pollutants like sulphur dioxide and nitrogen oxides react with water in the atmosphere producing acid rains.

### **Water Pollution**

It is the change in the composition of water by the addition of harmful substances. Water pollution severely affects the health of people. Sewage is one of the major pollutants of water. It contains organic matter and the excreta of human and other animals. Organic matter encourages the growth of microorganisms which spread diseases. The wastes of industries (acids, alkalis, dyes and other chemicals) are disposed in nearby water bodies. These wastes change the pH of water and are harmful or even fatal to aquatic organisms.

### **Effects of Water Pollution**

The following are major effects of water pollution. **Eutrophication:** Enrichment of water with inorganic nutrients (nitrates and phosphates) is called **eutrophication**. The sewage and fertilizers contain large amount of inorganic material (nutrients). When sewage and fertilizers reach water bodies, the nutrients present in them promote algal blooms.

### **Land Pollution**

Land (soil) is an important resource as it is the basis for the growth of producers. In the recent times, soil has been subjected to pollution. The pesticides used in agriculture have chemicals that stay in soil for long times. The acid rains change the pH of soil making it unsuitable for cultivation. The household and other city garbage lies scattered in soil in the absence of a proper disposal system. Materials like polythene block the passage of water into soil and so decrease the water holding capacity of soil.

### **Conservation of Nature**

Conservation of nature means the conservation of natural resources. Everything that we use or consume e.g. food, petrol etc. is obtained from natural resources. The renewable natural resources e.g. air are reproduced easily but the non-renewable resources (e.g. minerals and fossil fuels) are not replenished once they get depleted. We have to conserve the non-renewable resources because their reserves are limited and humans are heavily dependent on them for daily needs. The renewable resources too have to be judiciously used. To ensure sustainable use of resources in our environment, we should act upon the principle of 'The 3R' i.e. Reduce, Reuse, and Recycle.

### **Basic Information about Dengue Fever**

Dengue fever is a viral infection transmitted through a mosquito *Aedes aegypti*. It has become a major health problem in tropical and sub-tropical countries, including Pakistan. There are four types of dengue virus. Recovery from infection by one provides lifelong immunity against that virus but provides no protection against infection by the other three viruses. According to the World Health Organization, there are 50 million dengue infections worldwide every year. Now, there are 2.5 billion people at risk from dengue.

The female *Aedes* mosquito gets the virus when it bites an infected person. When an infected mosquito bites another person, viruses enter his / her blood and attack white blood cells. Inside WBCs, viruses reproduce and destroy them. In severe cases, the virus affects liver and bone marrow. As a result there is a decrease in the production of blood platelets and patient suffers from bleeding. Other symptoms of dengue include high fever, severe headache, pain behind the eyes, muscle and joint pains and rash.



**C: Synthesis/absorbing the information:**

1. Write your own summary-notes in your notes book based on the information you read.

**D: Practising activity:**

1. Please read what your text book says about the Acid rain and global warming.
2. Write a detailed note on the air pollution.

**E: Assessment for learning**

**Note: Choose the best option and write in an email along with its question no. as answer for your multiple choice questions. Mention only the correct answer in front of the MCQ no. [10×1=10]**

1. The pH of acidic rain is:  
 (A) 1 \_\_ 3                      (B) 2 \_\_ 4                      (C) 3 \_\_ 6                      (D) 4 \_\_ 6
2. Dengue fever is a:  
 (A) Bacterial infection      (B) allergy                      (C) Viral infection              (D) fungal infection
3. Dengue fever is caused by:  
 (A) Bacteria                      (B) virus                      (C) Germs                      (D) fungi
4. Dengue virus attacks on:  
 (A) white blood cells              (B) red blood cells              C) Platelets                      (D) brain

**Fill in the blanks.**

5. ----- means clearing of forests by natural causes or humans.
6. The substances that actually cause pollution are called the-----.
7. When pollutants like hydrocarbons and nitrogen oxides combine in the presence of sunlight, -----is formed.
8. The air pollutants like ----- and ----- react with water in the atmosphere producing acid rains.
9. The air pollutants like ----- destroy the ozone molecules and so break the ozone layer.
10. ----- means the establishment of new forests by planting on non-forest areas.



return type, and parameter types (if any). The general syntax of a function signature in C is as follows:

```
c Copy code  
  
return_type function_name(parameter_type1 parameter_name1, parameter_ty
```

In this example:

- The return type is int (the function returns an integer).
- The function name is add.
- The function takes two parameters: x of type int and y of type int.

And here's an example of a function with no parameters and a void return type:

```
c Copy code  
  
void printHello();
```

In this example, the function `printHello` doesn't take any parameters (`void` inside the parentheses), and it doesn't return any value (`void` before the function name).

1. Read your text book pages#103 to 104 of your textbook.
  - ✓ Functions.
  - ✓ Function signature.
  - ✓ Example of function signatures Table 5.1

**2. Practising:**

1. How many parts are there in function signature?
2. What does it mean by data type in function signature?
3. Describe data type in function parameters.

**Subject: English**

**Resource Book: Punjab Text Book (Grammar and Composition)**

**Marks for Completion and submission of the homework:**

**/50**

**Time allotted:**

**45 minutes/1 day**

**Objective:**

The students will be able to revise and write down the sentences of 1-70 pairs of words and translation of 1-11 passages.



| Topics   | Task   |
|--|--|
| Pairs of Words 36-50<br>Translation into English<br>Passage 7-10 | Q. Write down (on loose sheet) the given pairs of words and translation of the passages. |

**Subject: Islamiyat / Tarjuma tul Quran**

## ترجمة القرآن سورة المومنون

**مختصر سوالات کے جوابات تحریر کریں۔**

- 1- سورة المومنون میں مومنین کی بیان کردہ صفات لکھیں۔
- 2- سورة المومنون میں مومنین کو کس کا وارث قرار دیا گیا ہے؟
- 3- سورة المومنون میں کفار مکہ کے انکار کی وجہ لکھیں۔
- 4- سورة المومنون کی ابتدائی دس آیات سے متعلق حدیث کا ترجمہ تحریر کریں۔
- 5- سورة المومنون میں بیان کردہ انسانی تخلیق کے مراحل تحریر کریں۔

**Subject: Urdu**

| اشارات / اہم نکات  | تفصیل                                  | ہوم ورک           | تاریخ اور دن           |
|--|--|-------------------|------------------------|
| ڈگکا جاتے ہیں ریڑھے لڑکھڑا جاتی ہے جیب واپس آجائے سلامت سائیکل کی کیا مجال<br>بینہ برس جائے تو چل سکتی ہیں اس پر کشتیاں ڈوب جانے کا بھی ہو جاتا اکثر احتمال<br>اس کی ڈھلوانوں پہ موٹر کا دھڑک جاتا ہے دل اس کی موڑوں پر لرز جاتے ہیں اکثر باکمال | دیئے گئے درج ذیل اشعار کی تشریح لکھیں۔ | اشعار کی<br>تشریح | 8 فروری<br>بروز جمعرات |