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PART - II
(Sec: 01)

Q. No. 2
part: b

Enough length
Enough headings
Keep length equal for all parts
Attempt 2 questions in math
portion
Improve paper presentation

VITAMINS:

Definition:-

Vitamins are organic compounds that are required for the normal functioning of human body. They are required in smaller amounts but their is crucial. Absence of any vitamin in the system can lead to serious consequences.

There Types of Vitamins:-

There are two types of Vitamins:

- a. Fat-soluble Vitamins
- b. Water-soluble Vitamins

FAT SOLUBLE VITAMINS:

DEF:

Fat soluble vitamins are those organic compounds that are stored in the fat and those that can be

dissolved in fats. Since its property of being able to be dissolved in the fats, it got its name of fat-soluble. It includes Vitamin A, D, E and K.

WATER SOLUBLE VITAMINS

DEF.

Water soluble vitamins include those organic compounds that can be dissolved in water. Unlike the fat soluble vitamins, they are not stored in the body. The Vitamin B-complex and Vitamin C are included in this category. Since, these are not stored in the body they need to be regularly excreted out with urine.

ROLE OF VITAMINS IN HUMAN BODY:

Vitamins play a significant role in maintaining normal functioning of the body.

1. BONE HEALTH:

Vitamins help with stronger skeletal system. Stronger and healthier bones and teeth are possible due to having the right amount needed by the body. Vit-D helps in this.

2. VISION:

Vitamin A is known to help with the vision. It maintains a healthy eye. Deficiency of Vit-A lead to night blindness and in severe cases complete blindness.

3. SKIN:

In order to have a healthy looking skin, one must keep in view their vitamin intake. Vit-C, E are known to be beneficial in issues related to skin.

4. IMMUNE SYSTEM:

Immune system is stronger if the body has a right amount of vitamins. Vitamins guard the body against any foreign agents and maintains a healthy and strong, disease-free body.

Q. No. 2
part. 3.

CLIMATE vs. ENVIRONMENT

CLIMATE:

Definition:-

Climate refers to the long term atmospheric conditions of a certain region. The atmospheric conditions include patterns of rainfall, average temperature of the region, wind speed etc. Climate, primarily, refers the atmospheric patterns build over a period of decades and centuries.

EXPLANATION:

Climate is formed by many factors such as volcanic eruptions, solar emissions, wind patterns. Change in these factors leads to change in the overall environment.

These days, drastic and frequent changes in the environment are seen. It is mainly due to anthropogenic activities.

ENVIRONMENT:

Definition:-

Environment leads refers

to the overall living and non-living components of the earth. It includes natural elements as well as human interactions. The natural patterns (climatic sequences) and human interventions are included. Cities, buildings, factories etc are included in environment as well.

CAUSES OF AIR POLLUTION:

AIR POLLUTION:

Definition:-

Air pollution refers to the presence of potentially harmful particles in the atmosphere.

CAUSES:

Air pollution is caused by the following activities.

INDUSTRIAL EMISSIONS:

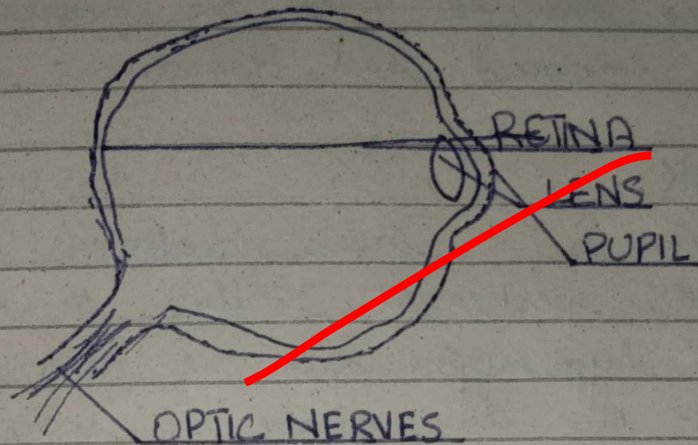
The harmful smoke emitting out of factories and industries leads to a surge of pollutants in the environment. For example, in Pakistan, smoke from brick kilns leads to smog. Lahore is one of the cities severely affected by smog.

BIOGAS EMISSIONS:

The burning of biofuel results

Q.No. 4
part. 2

STRUCTURE OF HUMAN EYE:



CORRECTION OF MYOPIA & HYPERMYOPIA

Myopia and hypermyopia are both refractive errors which means that the way light is focused by the eye is affected. Myopia refers to nearsightedness and hypermyopia refers to farsightedness.

WAYS OF CORRECTING THESE REFRACTIVE ERRORS:

1. EYEGASSES:

The most common way of correcting this is the use of eyeglasses. Either a convex or a concave glass is used in the spectacles.

2. CONTACT LENSES:

This is the second most common method of correcting near and far sightedness. Contact lenses sit right in the eye providing a better view. Contact Lenses can be used or available in both coloured and transparent versions.

3. LASIK:

This is a laser treatment which is the permanent solution to myopia and hypermyopia. With the help of laser light the lens shape is corrected.

Q. No. 4
part. b

UNITS OF HUMAN CELL:

Human cell is basic structure of the body. It has various units and components that help in maintaining its functions.

1. CELL MEMBRANE:

This is the outer layer of the cell. It provides support and keeps in the components intact. It helps in the passage of minerals and nutrients and the waste material.

2. NUCLEUS:

The central part of the cell is the nucleus. It controls all the activities going in the cell. It resides the genetic material as well. DNA is present inside the nucleus.

3. CYTOPLASM:

This is the jelly-like substance that holds in all the components of the cell.

4. ORGANELLES:

A cell has multiple organelles that are assigned with various jobs.

i. MITOCHONDRIA:

This is known as the power house of the cell because of its role in the production of ATP - energy currency of the cell.

ii. ENDOPLASMIC RETICULUM:

It is a network of membranes that helps in the production and synthesis of lipid. There are two types of ER. Rough ER which has ribosomes attached to it and Smooth ER which does not have ribosomes on its surface.

iii. GOLGI APPARATUS:

It transports the lipids and proteins, synthesized by ER to its destinations.

iv. LYSOSOMES:

This organelle helps in digesting process and breaks down cellular waste and other foreign particles.

v. CYTOSKELETON:

These are filaments made out of proteins that help in giving a proper structure to the cell.

vi. CENTROSOME:

It functions during cell division.

SECTION - II

Q. NO. 6
part. a

Q VOLUME OF THE CYLINDER

radius, $r = 8 \text{ cm}$

height, $h = 15 \text{ cm}$

Volume, $V = ?$

Solution:

Using the formula

$$V = \pi r^2 h$$

$$V = 3.14 (8)^2 (15)$$

$$= 3.14 \times 64 \times 15$$

$$= 3014.4 \text{ cm}^3$$

Ans.

Q.NO.6

part. b

An octagon has 8 sides and all sides are equal in length and has the same angles.

$$\text{Exterior angle} = \frac{360^\circ}{8} = \underline{45^\circ}$$

$$\text{Interior angle} = \frac{n-2 \times 180^\circ}{n}$$

$$= \frac{(8-2) \times 180^\circ}{8}$$

$$= \frac{6 \times 180^\circ}{8}$$

$$= \frac{1080^\circ}{8}$$

$$= \underline{135^\circ}$$

Ans

part. c

Surface Area of Dal Lake

Length = 4.6 miles

Width = 2.2 miles

Surface area = ?

Solution:

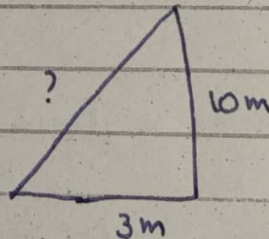
$$A = L \times W$$

$$= 4.6 \times 2.2$$

$$A = 10.12 \text{ square miles}$$

Ans

part. d



Height = 10m

Base = 3m

Hypotenuse = ?

Solution:

Using Pythagoras formula

$$H^2 = P^2 + B^2$$

$$H^2 = (10)^2 + (3)^2$$

$$H^2 = 10000 + 9$$

$$H^2 = 10009$$

Taking sq root on both sides

$$\sqrt{H^2} = \sqrt{10009}$$

$$H = 31.72$$

So the height of the ladder is
31.72 m
