

Date: _____

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General Science and Ability

Part - II

Section - 1

Q# NO 2

~~Q# NO 2~~

Climate and environment
and causes of air pollution
in Pakistan

Climate Change

According to UNFCCC

" a change of
climate which is due to directly or
indirectly by human activities change
the global atmosphere and climate
variability observe over comparable
time period."

It is occur due to increase

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global average temperature by human activities burning fossil fuels, deforestation industries that release a large amount of GHGs into the atmosphere. These gas trap heat from sun leading to rise in global temperature.

Environment

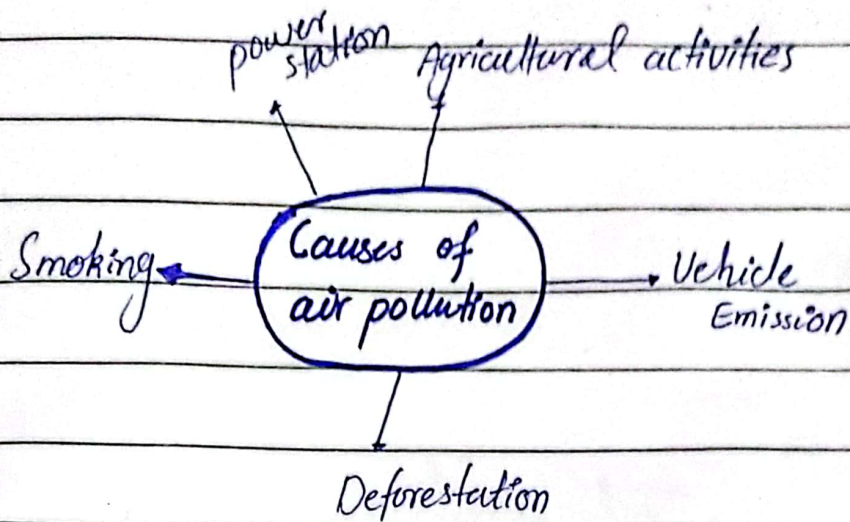
Environment can be defined as "anything that surround the object and has influenced on it." In this both living and non living thing include. Living organism include plant, animal and human. Non living thing include air, temperature etc.

Causes of air Pollution in Pakistan

Air pollution occur when different harmful pollutant release into the atm. from different source. They may be primary pollutants and secondary pollutants also which cause air pollution.

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i Agricultural activities:

Air pollution

due to agricultural activities is a significant concern, as it can have harmful effect. Some ways of agricultural activities contribute to air pollution is

- Ammonia emission from livestock
- particulate matter from harvesting
- Volatile organic compound due to pesticides and fertilizer.

ii Vehicle Emission

Air pollution

also occur in Pakistan due to vehicle emission which include the burning of fossil fuels which releases NO_x and SO_x .

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Deforestation

Deforestation reduce the ability of plant to absorb the Carbon dioxide from the atmosphere as a result, CO_2 release directly to the atmosphere.

Power Plant

Due to burning of fossil fuels, in the power plants the GHGs release into the atmosphere which cause air pollution

Carcinogen

Due to smoking, 40% carcinogen release directly into the atmosphere and cause air pollution.

These are the main cause of air pollution in Pakistan, it is urgent to overcome the main source which cause air pollution because due to industrialization, air pollution increase day by day.

~~(b)~~

Vitamins and their role
in human body

Vitamins

Vitamins are organic compound which are needed in small quantity to perform different activities in human body. There are two type of vitamins.

i Fat soluble vitamins (K, A, D, E)

ii Water soluble vitamins (B, C)

Fat soluble vitamins absorb in body with the help of food that contain fat. Food that contain water soluble vitamins require on daily basis and large quantity.

Role of vitamins in Human body

There are different types of vitamins that are present in human body and have different role.

vitamin	Functions
Vitamin A	Growth, maintenance of skin bone development
Vitamin B	carbohydrate metabolism cellular respiration
Vitamin C	Formation of bone and connective tissue
Vitamin D	Calcium absorption
Vitamin E	Antioxidant
Vitamin K	Blood clotting

The major role of vitamin is following

- facilitating growth and development in human body
- Enhance the body's use of carbohydrate protein and fat
- Necessary for formation of Red blood cell in human body.
- Formation of genetic material deoxyribonucleic acid.

These are some major role which vitamin perform in human body.

Question 5

~~Q(6)~~

Differentiate between the covalent and ionic bond.

Ionic Bond

Covalent Bond

Definition A bond which is formed due to electrostatic force of attraction between the oppositely charged ion.

A bond formed by sharing of electrons pairs between atoms.

Electron Interaction

Electron transferred from one atom to the another atom.

Electron shared either equally or unequally.

Bond Formation

Formed when one atom loses electrons or another gains electrons

Formed by sharing of electrons.

Solubility in water

Typically soluble:
the compound
in water

Can be soluble or
insoluble.

Electronegativity difference

Usually greater
than 1.7

Typically less than
1.7

Example

Sodium chloride
and Magnesium
oxide

Water (H_2O) and
methane

~~(C)~~

Uses of Gamma Rays

X-Rays and Radio waves

Uses of Gamma Rays

Gamma rays are a
type of electromagnetic radiation with
shortest wavelength and highest
energy.

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Uses of gamma rays are following

- (i) Cancer Treatment
- (ii) Medical imaging
- (iii) Sterilization
- (iv) Food irradiation

Cancer Treatment

Gamma rays are used in field of medical to kill cancer cell and shrink the tumors.

Medical imaging

Gamma rays are use in Positron Emission Tomography scan to produce image of body's internal structure.

Sterilization:

Gamma rays are use in Laboratory to sterilize the equipments.

Food industry:

Gamma rays are used to kill bacteria and extend the shelf life of food.

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Use of ^{x-}rays:

Uses of x-rays

are following

i Medical imaging

To diagnose

and monitor various medical condition such as bone fracture, cancer

ii Industrial inspection

To examine

any defects on industrial equipments and process.

iii Research

To study properties

of materials, biological sample and other phenomena.

Section-11

Question 6

~~(a)~~

Radius of cylinder is 8cm. ?

Data Given:

radius of cylinder = 8cm

Height of cylinder = 15cm

volume of cylinder = ?

Formula:

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

Solution:

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

$$= 3.14 (960)$$

$$= 3014.4 \text{ cubic cm.}$$

So the volume of cylinder is approximately 3014.4 cubic cm.

~~(b)~~

Maximum Length of Dal Lake = 4.6 miles

Maximum width of Dal lake = 2.2 miles

$$L = 4.6 \times 1.60934 = 7.398 \text{ km}$$

$$W = 2.2 \times 1.60934 = 3.535 \text{ km}$$

$$A = L \times W$$

$$= 7.398 \times 3.535 \text{ km}$$

$$A = 26.14 \text{ square kilometer}$$

So surface ^{Area} of Dal-Lake is 26.14 square kilometer.