

Section-II

Q#05

Population explosion:

(A) Causes:-

Pakistan is the fifth most populous country. Some ^{major} causes of population explosion are:

(1) Rate of illiteracy

The literacy rate in Pakistan is only 69%. Rest of the population is unaware about the consequences of population explosion.

(2) Unplanning Family Strategy:

"Family planning" is important but in Pakistan there is no any concept to strictly follow this strategy. Moreover less awareness is also brought about the population bombing.

(3) Urge to get male (boy) members by parents:

In Pakistan, a huge population wants to get baby boy and in doing so, a number of abundant daughters increase the population number.

B) → Control Measures:-

Here are some Control measures to hinder this explosion:

(1) Limited number child policy
A policy announced by government to fix the number of children helps to reduce the population explosion.
For example:

China's 2 baby policy.
(2) Give incentives by government
Government should assign some incentives for those parents who follow their policy.
For example:

Free medical facilities, less schooling fees, maternal care by government.

(3) Involve Clergies / Establish Islamic interpretation about child policy.

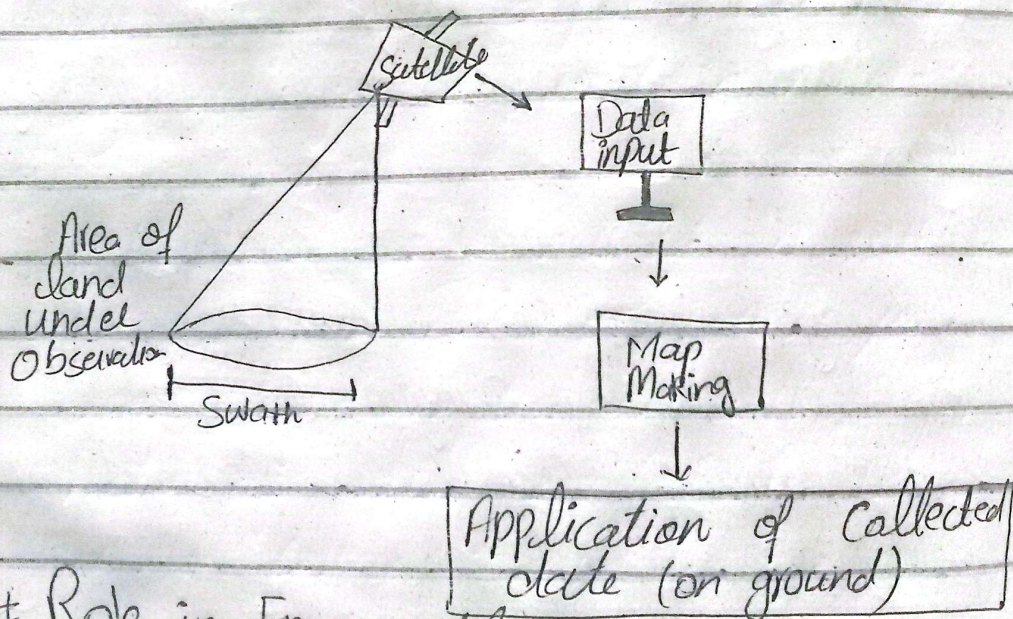
It will help people to understand it's not un-Islamic. When resources are limited. All these measures are necessary to opt as soon as possible.

(b) Remote Sensing :-

"Remote Sensing" is a technique that is use to detect anything without any physical Contact with it. It is also known as "detection through some distance."

Role of GIS in Environmental Science

"Geographic information system" consist of the following Components :-



Role in Environmental science

① Calculate / Analyze the Changing Weather pattern

② Land Cared by Crops, estimated production of Crops and their specific types

① Measure the disturbed land area after any disaster.

② Impacts of climate change on land such as glacier meltings, river flowing patterns.

③ Construction of dams, bridges, roads for resilient cities construction prone to climatic changes effects such as, floods, Tsunamis, Cyclones, hurricanes etc.

(C)

Atmosphere is the blanket of Earth :-

Atmosphere is just like a blanket around the earth because it consists of several layers having unique features and length.

Layers of Atmosphere :-

(i) ~~Troposphere~~ Stratosphere

(ii) Thermosphere

(iii) Mesosphere

(iv) Ionosphere

Stratosphere :-

It is the first layer of gases surrounding the earth. It is almost 10 km in length. The most important gas Oxygen is present here.

② Thermosphere:-

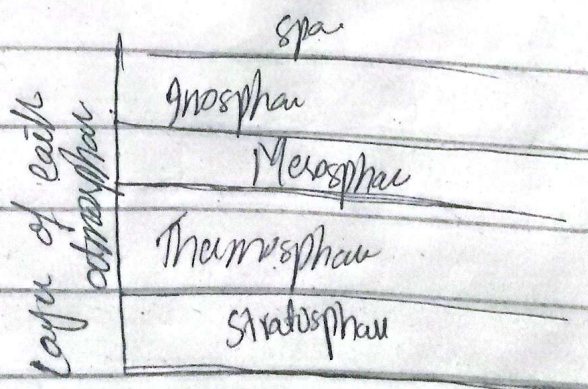
It is the 2nd layer of gases in atmosphere. The temperature rise from 57°C to 550°C . A sudden change in temperature is observed here compared to 1st Stratosphere.

③ Mesosphere:-

It is the 3rd layer of gases and again here temperature begins to decrease. Ozone layer is present in this layer.

④ Ionosphere:-

Radio waves are generated in this layer of atmosphere. These rays make possible long range connection on earth surface. Auroras are also generated in this layer due to collision between ions.



d) Define the following Terms:-

(i) Hydrometer:

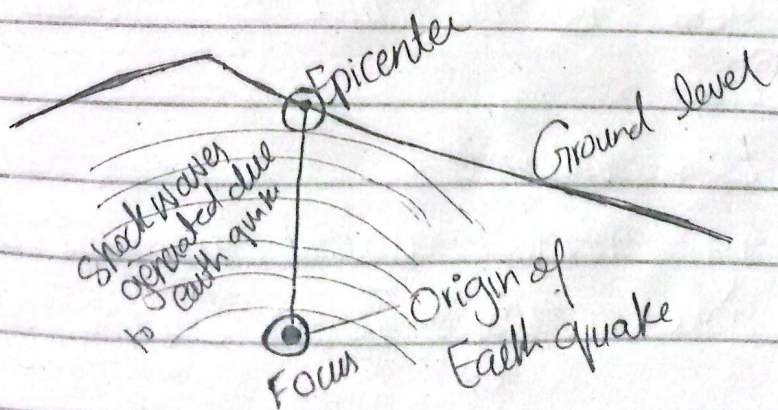
It is a device use to measure the pressure of water.

(ii) Epicenter:

It is the exact point above the focus from where earth quake is generated.

(iii) Deep Focus:

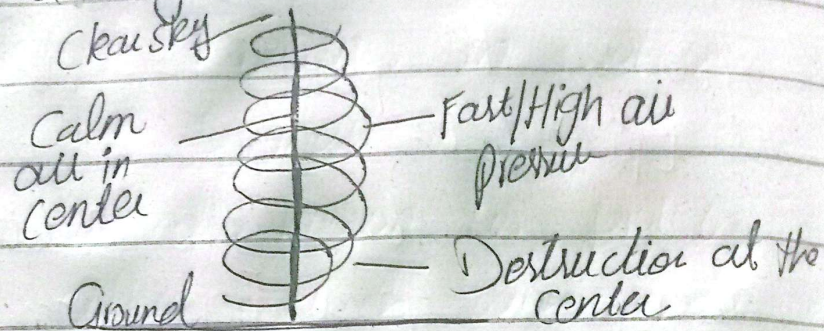
Focus is also known as "Hypocenter". It is the central point at which earth quake is originated.



(iv) Eye wall of Cyclone

"Cyclone is a layer of rotating wind with high pressure from ground to above."

Since, it is hollow from inside and fast movement of air surrounding it, therefore it looks like an eye also known as eye of a cyclone.



Causes: Due to warm air on Ocean Surface

Affected Area: 100 - 1000 Km.

Destruction: At massive level.

(iv) Light Year:

Light year is the unit of measurement in Space.

For example:

A galaxy revolves around the black hole nearly 7000 light years.

(Q#04)

(c) Different methods of Solid Waste management:

SWM (Solid Waste management) is a process of Collecting, recycling, dumping of Waste.

Different Methods:-

i) Segregation of Waste:

Recyclable and non-recyclable Waste are separated for management.

ii) Dumping at Selected Site:

Solid Waste are dumped under the ground at massive level.

For example:

"Mahmood Boti" dumping site in Lahore.

iii) Incineration:

Burning of Waste is also a technique to manage it. It may be Close incineration or may Open burning.

iv) Organic Waste to Compost formation:

"Compost" is an Organic fertilizer use as an alternate of chemical fertilizer. It is made from Organic kitchen household Waste.

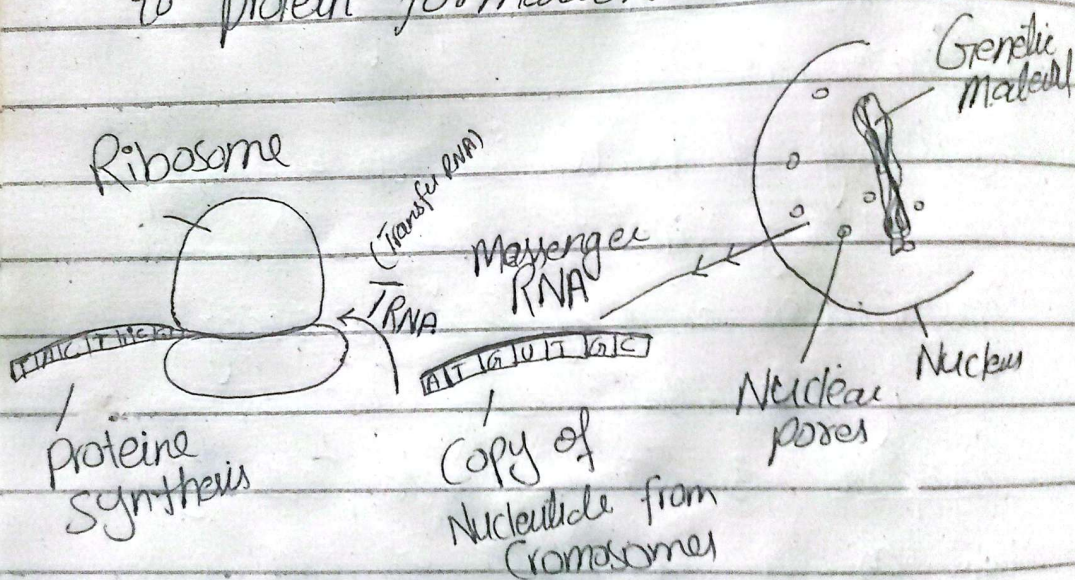
v) Bio gas formation from animals Solid Waste.

"Biogas" used for household purposes are formed by animal solid waste in a number of villages in Pakistan.

(b) Role of Ribosomes in protein Synthesis.

"Ribosomes" are also known as "Protein Factory". They are either attached with endoplasmic reticulum or freely move in the cell cytoplasm.

Process of "transcription" help to protein formation.



Nucleus has genetic material from where messenger RNA copy the sequence of nucleotide and bring

it to the Cytoplasm. Transfer RNA Supply proteins to Ribosomes Where protein is Synthesis according to the Copied Nucleotide Sequence by the process of transcription.

(a) "Chlorophyll"

"Chlorophyll" is a green pigment present in plant Kingdom. It is present in leaves where the process of "photosynthesis" takes place. These chlorophyll capture the Sun light and function the food synthesis process. There are 3 types of chlorophyll.

-) Chlorophyll a
-) Chlorophyll b
-) Chlorophyll c

Each chlorophyll has specific range to capture the wave length of Sun light. Together they produce synergistic effects to initiate the photosynthesis.

These are only present in green parts of plants. The green colour of leaves are due to presence of chlorophyll.

"Mg" is the Central element of chlorophyll. Lack of magnesium in plants leads to yellowing of leaf. The plant started wilting and there is no food production in such leaves.

Spots on leaves also an indication of lack of magnesium.

To compensate this deficiency, several fertilizers rich in magnesium are applied to plants.

(d)

Define the terms :-

Biofuel:

Fuel that is produced by using organic material are called biofuel. There are three generations of Biofuel:-

- ① 1st generation - From direct use of organic material such as sugarcane to generate fuel.
- ② 2nd generation - From the leftover or residue of organic waste.
- ③ 3rd generation - From "Algae",

(iii) Hydrosphere:-

The surface of earth that is covered by water is called hydrosphere.

For example:

Oceans, lakes, rivers, canals - are all included in hydrosphere.

(iv)

Troposphere:-

It is the layer of atmosphere that is above the earth's surface.

These gases are present here to make life possible on earth.

It is from 10 - 57 km in height and temperature is reducing as we move above from the surface.

(Section - II)

Match Terms:-

(i) STSTAICITS

STATISTICS

(ii) LGEBMAR

ALGEBRA

Given Data:

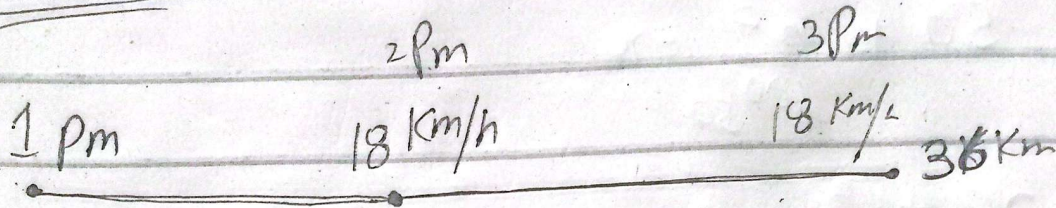
(c) Distance Covered = 36 Km

Per hour distance covered = 18 Km

Starting time = T_1 = 1 Pm

Final time = T_2 = ???

Solution:



Final time = T_2 = 3 Pm Answer

(a) Apple, Berry, Cherry, Date

3 : 6 : 2 : 5

(3 × 5) (6 × 2)

Date candies are 5, and apple candies
are exceed by 35 of date candies

(15) (12)

25% of 200\$ + 6% tax.

$$\frac{25}{100} \times 200 + \frac{6}{100} = \text{Total paid amount}$$

$$\frac{1}{4} \times 200 + \frac{6}{100} = x$$

$$50 + \frac{6}{100} = x$$

$$50 + \frac{3}{50} = x$$

$$\frac{50+3}{50} = \frac{53}{50} = x$$

Q#07:-

(c) Spot the error:-

2, 6, 18, 54, ~~162~~, 486

[No error] (Multiple of 3)

(ii)

3, 5, 7, 11, 13, 17

+2 +2 +4 +2 +4