

Part II

Section I

Question 05

(a)

Formation of cyclones

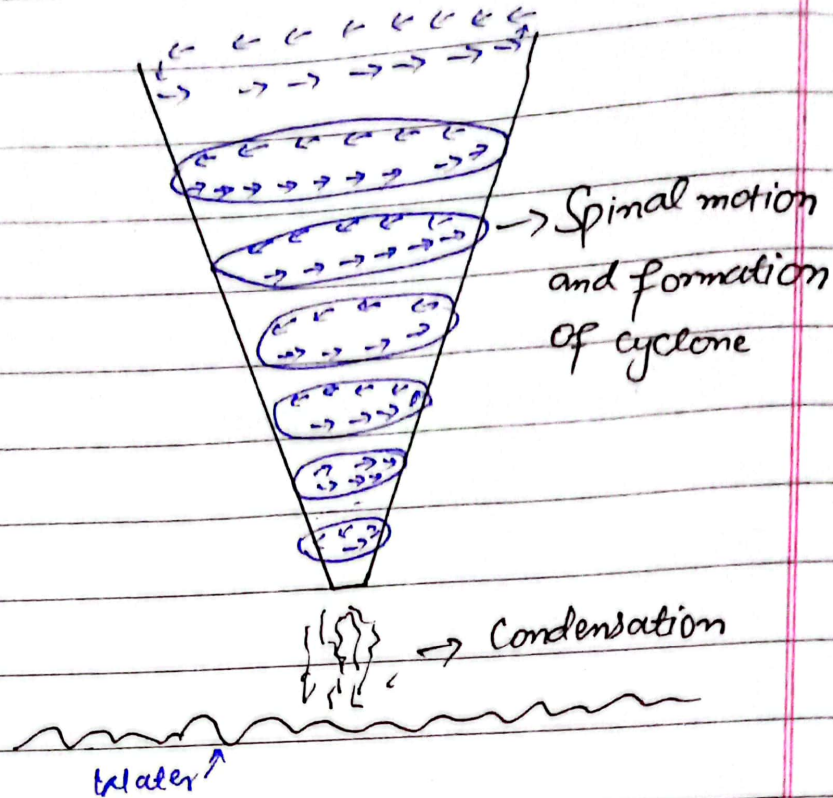
Cyclone:

is commonly known as a natural disaster that causes huge destruction. Humans and other living creatures face the wrath of cyclones at a higher level. Antarctic zone is famous for the formation of cyclones. In 1971, Bhola cyclone brought a destruction of higher level in Bangladesh, then known East Pakistan.

Formation of cyclone

cyclones are formed due to the spinal motion of the earth and condensation process that takes

place in the ocean.



Coriolis effects or Coriolis motion plays an important role in cyclone formation. Coriolis motion is the motion or effect generated by the spin motion of the earth. First of all, the water due to the heat of Sun evaporates and began to stay in low temperature area which is far above sea. Here, this process of water evaporation is known as Condensation. Here, the coriolis effect spins this water in opposite

DAY _____ Date _____
directions. Due to this opposite motion, the winds began to spin and become uncontrollable. As a result of this cyclone occurs and create destruction.

(b)

Difference between Ionic and Covalent bond

Bonds:

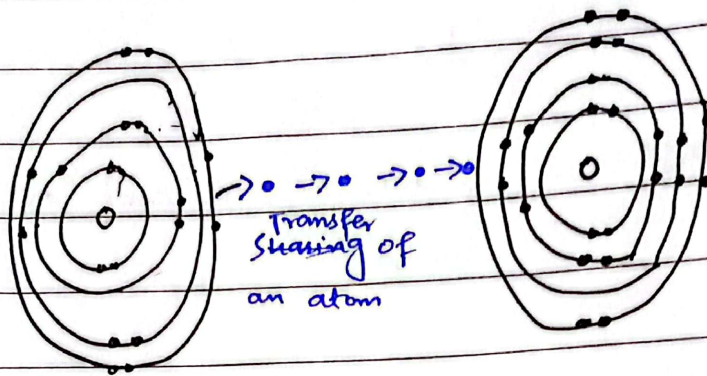
are formed by atoms in order to achieve stability. If an atom does not have stability, it receives another particle from other atom to achieve stability.

Difference between Ionic & Covalent bond

Ionic Bond

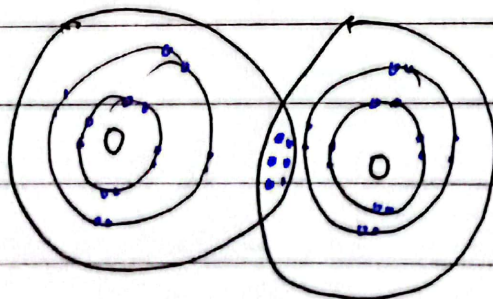
An Ionic bond is formed when an atom receives another particle or atom from another atom. Simply, it

is formed when an atom feels unstable due to deficiency of a atom. Then it receives that particular atom from another atom. The sharing of electron forms Ionic bond.



Covalent Bond

Opposite to the formation of Ionic bond, Covalent bond is formed by mutual sharing of atoms. In the formation of Covalent bond, mutual sharing of atoms occurs that forms bond.



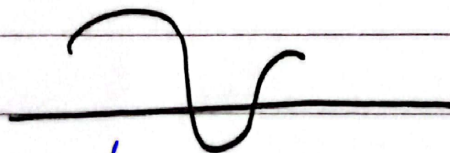
- Covalent bond is more strong than Ionic bond
- Covalent bond can remain longer than Ionic bond
- Covalent bond is formed by two stable atoms
- Ionic is not strong enough
- It is formed by one stable and one unstable atom

(C)

• Uses of Gamma Rays, X-Rays and Radio waves

Waves:

waves are known as transformative thing that requires no medium for its transfer or passage



Shape of wave

Uses of Gamma Rays

Gamma Rays

are high frequency and high energy waves and short wavelength

Uses

- i) Kill cancerous cell in body
- ii) used to eradicate stone in the kidney
- iii) used for other diseases

X-Rays

are the waves that have less energy and less frequency than gamma rays but high wavelength than gamma rays.

Uses

- i) used for the X-Ray of any part of body
- ii) provide whole image of the body

Radio Waves:

are the waves that

have less energy and less frequency
but have high wavelength.

uses

- i) used for conveying signals
- ii) used in radio stations
- iii) used in technological devices

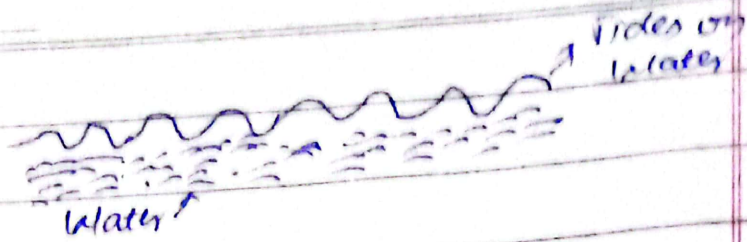
(d)

Tides and note on L.E.D

Tides

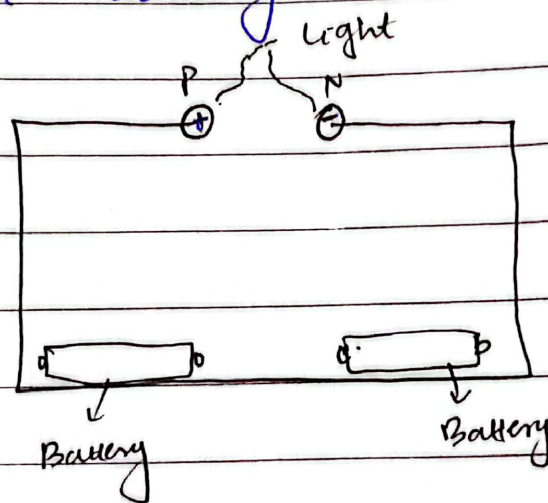
are known as the formation of water in oceans. These tides are formed on water level that comes towards the banks of oceans. In night time, tides are formed by the light of moon that directly falls on surface of water and forms tides.

By standing on the bank of a water body, tides can easily be observed.



L.E.D

Simply known as Light Emitting Diode. Its second name is PN junction. It allows the light to occur and prevail in the area. The light that is generated artificially not naturally.



L.E.D simply emits light by connecting P type and N type semiconductors. Both positively charged and negatively charged electrons and neutron and battery helps it in the process of emitting light.

Question no 02

(a)

- Difference b/w climate & environment

- causes of Air pollution

Climate:

refers to the seasonal change that occurs in its time. Simply it refers to occurrence of Summer, winter, Spring and Autumn. All things related weather come under the term of Climate.

Any change in the pattern of weather is known as climate change. Nowadays, climate change has become a potential threat regarding the survival of humanity. Pakistan is 8th most vulnerable country against climate change.

Environment

refers to our habitat and the habitat of all other things. All things such as humans, plants and animals are living in an environment. Climate change impacts environment.

Causes of Air Pollution in Pakistan

Air Pollution

taken harmful pollutants adds into the atmosphere

Causes:

- i) Population growth
- ii) Solid waste
- iii) Burning of remainings of crops
- iv) Transportation: Vehicles, Bikes
- v) Agricultural products: Fertilizers
Pesticides
- vi) Combustion of fossil fuels
- vii) use of Acs Refrigerators

According to IPCC, 35% pollutants and carbon is emitted from the combustion of fossil fuels in Pakistan.

(b)

Note on Vitamins

Vitamins

are one of most important component of balanced diet. They are obtained from different sources.

Sources of Vitamins

- i) Green leaf vegetable
- ii) Meat, Milk, egg
- iii) Fish, vegetables
- iv) Sun's light (Vitamin D)

Vitamins

B Complex

Vitamin C

Vitamin A

Vitamin D

Day _____ Date _____
Vitamin E

Vitamin K

Role in Body

- i) play role in growth
- ii) Blood clotting (K)
- iii) Strengthening bones (D)
- iv) Skin, Hair growth (E)
- v) improving eye sight (A)

Disease due to deficiency

- i) Night Blindness (deficiency of A)
- ii) Rickets (deficiency of D)
- iii) problem in blood clotting (deficiency of K)
- iv) Restricted growth (deficiency of vitamins)

(c)

Comparison of goals of Cop 27
vs Cop 28

COP:

is the conference that is held every year regarding tackling the disastrous and emerging problem of climate change. Cops are held to mitigate the human activities that are exacerbating climate change.

Goals of Cop 27

- i) Reach to the temperature level that was compromised in Paris agreement
- ii) Commitments of various countries such as America, Russia, Canada, China and India to reduce carbon emission
- iii) Find solutions for climate change
- iv) idea of Loss & Damage fund but was not executed
- v) Assist third world countries w^hich were are facing climate change
- vi) Plantation drive was agreed (Pakistan completed)
- vii) Deforestation would be eradicated
- viii) Aforestation was agreed

Goals of Cop 28

- i) eradicate the use of fossil fuels

- ii) Operationalization of Loss and damage fund
- iii) Commitment to reduce carbon emission by developed countries
- iv) Enhancing awareness about climate change
- v) Reaching the temperature of Paris Climate Conference ^{agreed in}
- vi) Promoting re-newable energy resources
- vii) Participation of Multi-national companies in mitigating carbon emission would be ensured

(d)

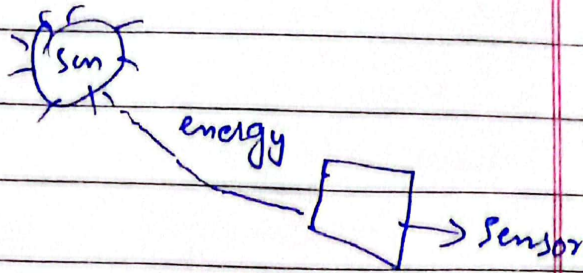
Active & passive Sensors are their usage in G.I.S

Sensors:

are valuable instrument that provide sensory information about anything. They are used in remote sensing and GIS as well.

Active Sensor

are those sensors that have their own medium of energy. It could be natural source of energy.



Particularly, they get energy from the Sun. They do not work when the energy of Sun stops.

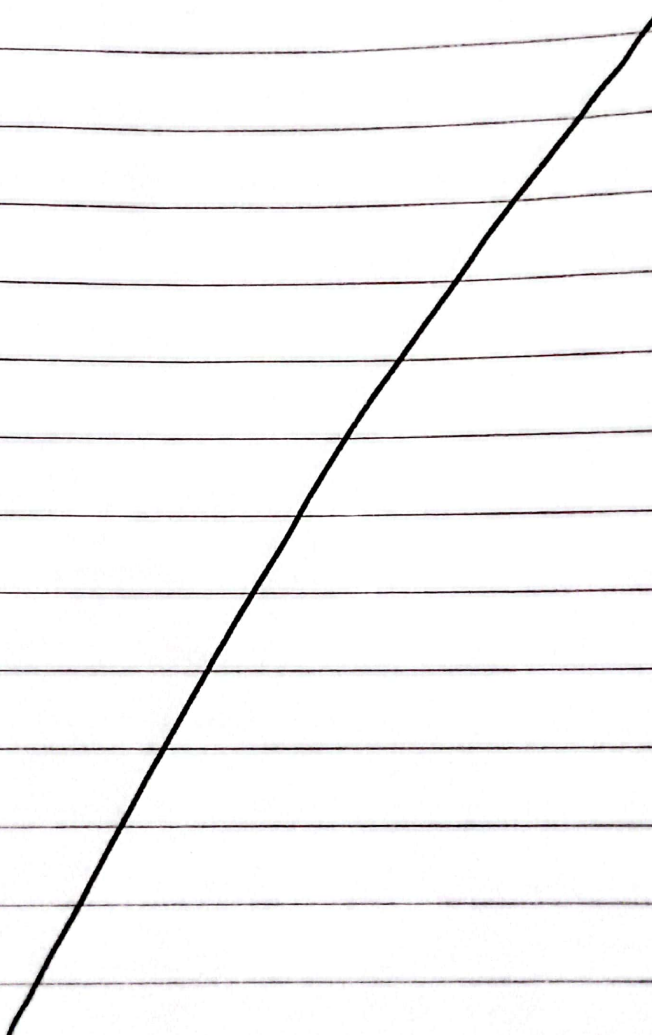
Passive Sensors

are the sensors that do not have their own energy source. Rather, they rely on external energy resources. They could work at night because they are not dependent on the energy of Sun.

Usage in GIS

GIS is known as Global Information System that provide valuable insights regarding

geography and map. Nowadays map making is dependent on GIS. These sensors provide sensory information the completion of the process of GIS. They attain certain information and provide it to the system.



Section II

Question 08

(C)

Given data: Word "Superintendent"

Required data: Probability of vowel?

Sol:

= Total number of letters

in Superintendent: 14

= Number of vowel: 5 (u, e, i, e, e)

= Probability = $\frac{\text{Number of vowels}}{\text{Total no of letters}}$

$$= P = \frac{5}{14}$$

$$= 35\%$$

(a)

= Formula of IO:

It involves the

Comparison of an individual's performance

to other performers in his age group.

Formula =

$$IQ = \frac{\text{Mental Age}}{\text{Chronological Age}} \times 100$$

Factors that affect IQ

- i) Genetics
- ii) Environmental factor = Socio-economic access to education
- iii) Education
- iv) Nutrition
- v) Access to resources

(d)

Given data 4320 Rupees

Required data = distribution among
Zahid, Aslam, Ashraf

Sol

Zahid's part = 2

Aslam's part = 3

Ashraf's part = 7

$$\begin{aligned} \text{Total parts} &= 2 + 3 + 7 \\ &= 12 \end{aligned}$$

$$\text{Value of one part} = \frac{4320}{12}$$

$$= 360$$

$$\begin{aligned} \text{Zain's 2 parts} &= 360 \times 2 \\ &= \boxed{720} \end{aligned}$$

$$\begin{aligned} \text{Aslam's 3 parts} &= 360 \times 3 \\ &= \boxed{1080} \end{aligned}$$

$$\begin{aligned} \text{Ashraf's 7 parts} &= 360 \times 7 \\ &= \boxed{2520} \end{aligned}$$

Question no 07

(C)

Given data = 30 mg medication = 1 Tab

Required data = 240 mg = How many ?

Sol

$$1 \text{ Tab} = 30 \text{ mg}$$

$$240 \text{ mg} = ?$$

$$= \frac{240}{30} \times 8$$

$$= 8 \text{ Tab}$$