Date: _____

Part- II

SECTION - I

Q#04

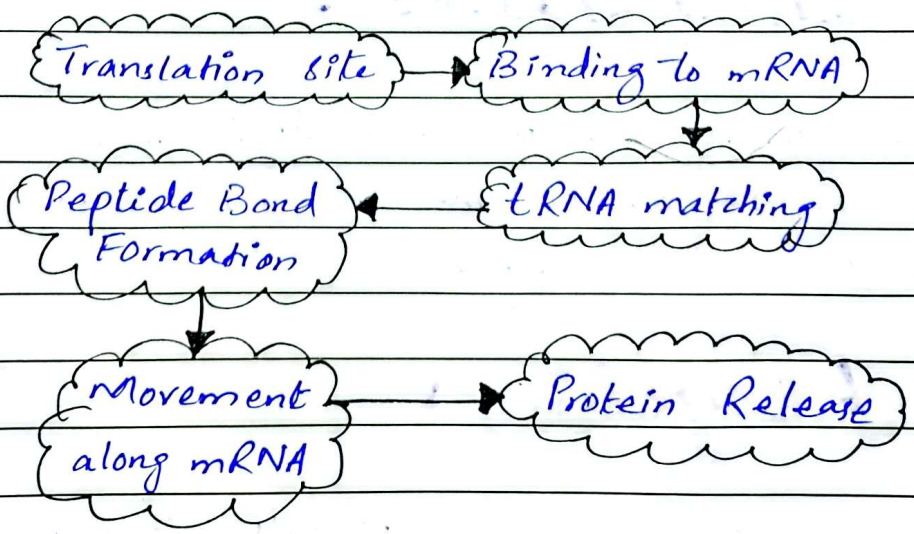
(b)

Ribosomes are essential for decoding genetic instructions and assembling proteins which are vital for cellular structure, function, and regulation. They exist in two forms:

→ Free ribosomes

→ Bound ribosomes

The role of ribosome in protein synthesis



Date: _____

(C)

There are six methods of solid waste management.

1- Landfilling
2- Incineration
3- Recycling
4- Composting
5- Pyrolysis
6- Gasification

Landfilling:

Disposal of waste by burying it in designated grounds often with environmental safegaurds.

Incineration:

Burning of waste at high temp. to reduce volume and sometimes generate energy.

Recycling:

Processing used materials into new

Date: _____

products to conserve resources and reduce waste.

Composting:

Biological decomposition of organic waste into nutrient-rich soil conditioner.

Pyrolysis:

In absence of oxygen organic matter decomposes at high temperature to produce bio-oil, bio-char, and syngas.

Gasification:

Carbon-rich waste converts into synthetic gas using controlled amount of oxygen.

Date: _____

(a)

Cholorophyll

ZEENAT

Date: _____

(d)

Biofuel:

The liquid fuel produced from organic matter such as plants, algae or agricultural waste.
Ex. Ethanol

Adulteration:

It is the process to add unnecessary content to product more $ in order to enhance profit.

Hydrosphere:

It refers to the region of earth where water is present including oceans, lakes, rivers etc. It covers 71% of the earth.

Troposphere

It is lowest layer of earth's atmosphere extending upto 12 km above earth's surface.

Date: _____

Isotopes:

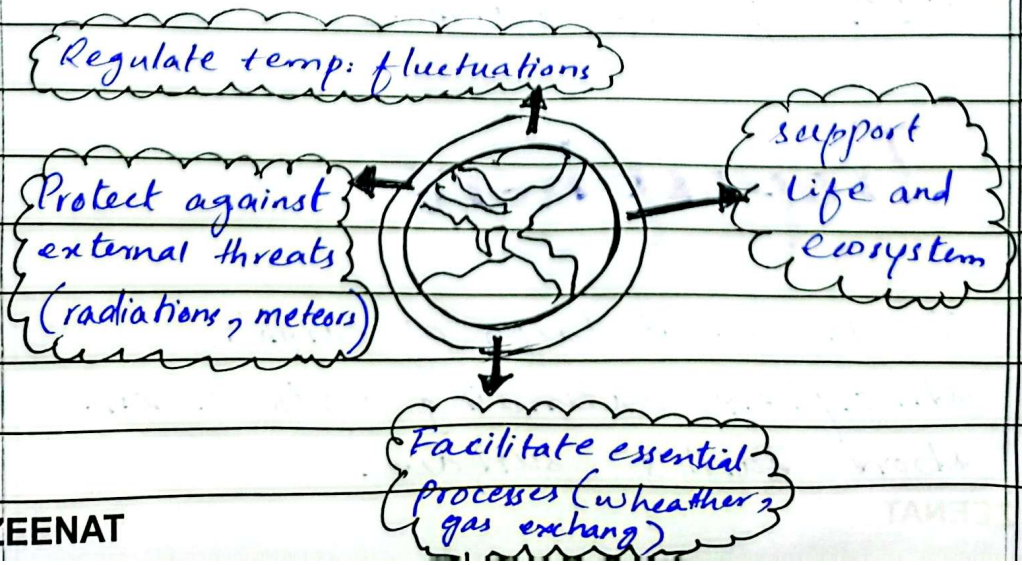
Atoms having same number of protons but different number of neutrons.

Example: ^{12}C , ^{13}C / ^{16}O , ^{18}O

Q#05

(C)

Yes, the atmosphere is the blanket of earth because its functions as protective blanket, enveloping and sustaining the earth, making it an apt analogy. Atmosphere's role as a blanket of earth is evident in its ability to do the following:



Date: _____

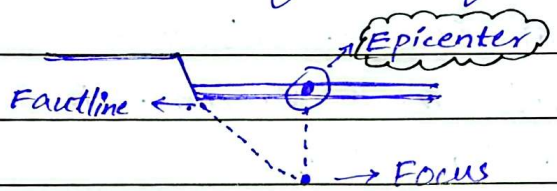
(d)

Hydrometer:

It is instrument to measure specific gravity and density of liquid.

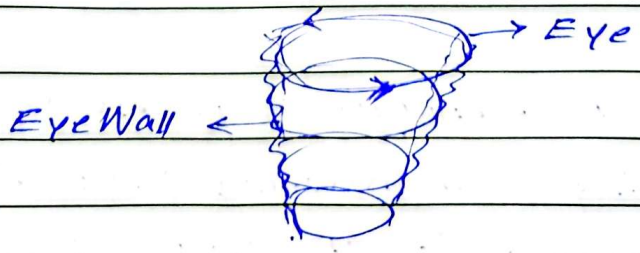
Epicenter:

Point on earth's surface directly above the focus of earthquake.



Eye wall of Cyclone:

Ring of severe thunderstorm surrounding the calm "eye" & contains storm's strongest winds & heaviest rainfall. It is the most dangerous part of cyclone



Date: _____

Deep Focus :

It is a technique in which everything within the frame (foreground, mid-ground, and background) is in sharp focus simultaneously.
Ex. Orson Welles

Light Year :

Light year is the distance light travels in a vacuume in one terrestial year.
Value : 5.88 trillion miles.
It is unit of distance.

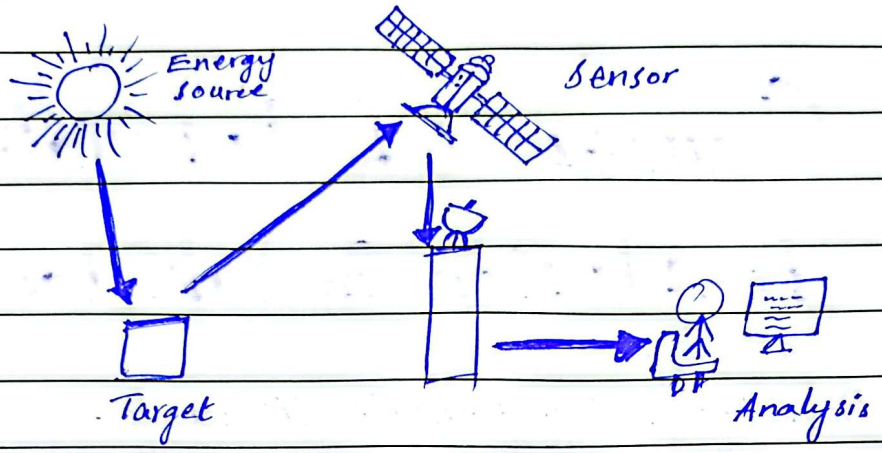
(b)

Remote Sensing :

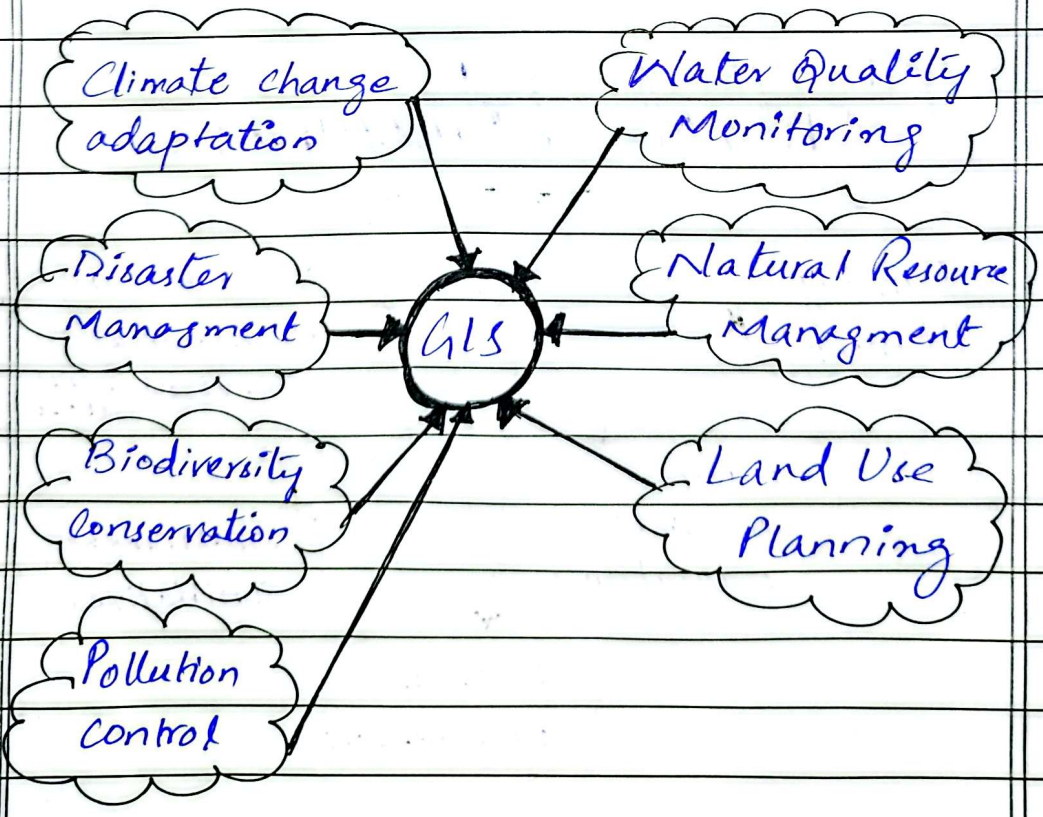
It is a technique or process of detecting & monitoring physical characteristics of an area by measuring

Date: _____

its reflected and emitted radiation from distance.



Role of GIS in Environmental Science



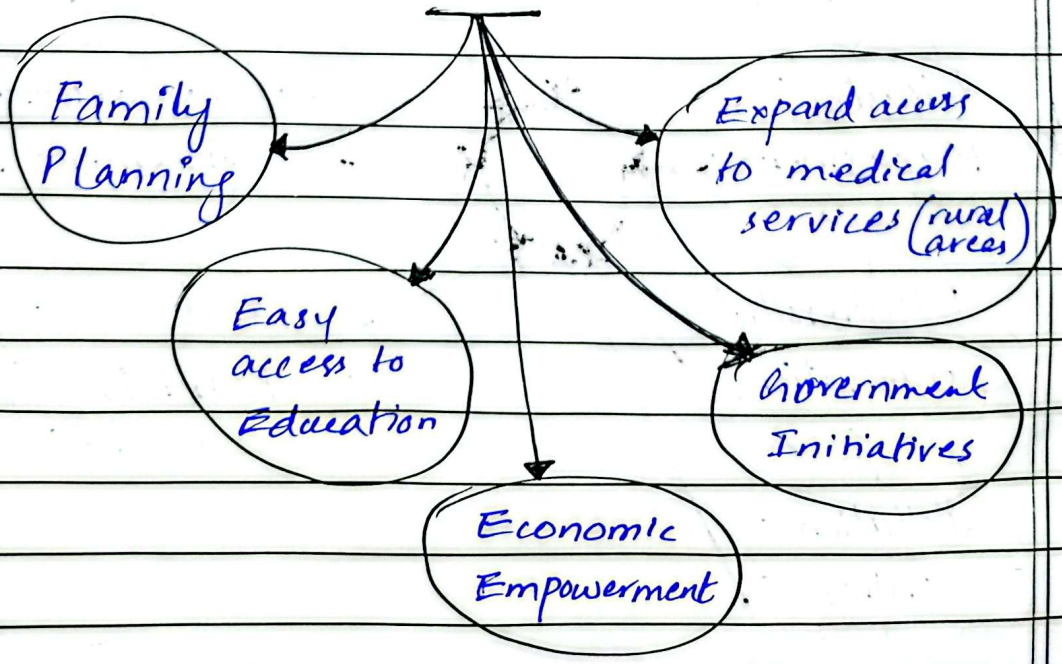
Date: _____

(a)

Causes Of Population Explosion in Pakistan

Poverty, low female literacy, early marriages, underutilized contraception methods and limited access to family planning, are the main causes of population explosion in Pakistan.

Control Measures



Date: _____

SECTION-II

Q#07

(a)

Data

Diameter = 14cm

Use $\pi = 22/7$

TO Find

Volume = ?

Formula

$$\boxed{V = \frac{4}{3}\pi r^3}$$

Solution

$$r = \frac{d}{2} = \frac{14}{2} = 7cm$$

$$V = \frac{4}{3} \times \frac{22}{7} \times 7$$

$$V = \frac{88}{3}$$

$$\boxed{V = 29.33\ cm^3}$$ Answer

Date: _____

(d)

Data

$a = 5$ cm

$b = 12$ cm

$c = 13$ cm

To Find

$A = ?$

$B = ?$

$C = ?$

Formula

$$\cos A = \frac{b^2+c^2-a^2}{2bc}, \quad \cos B = \frac{a^2+c^2-b^2}{2ac}$$

$$\cos C = \frac{a^2+b^2-c^2}{2ab}$$

Solution

$$\cos(A) = \frac{(12)^2+(13)^2-(5)^2}{2(12)(13)}$$

$$= \frac{144+169-25}{312}$$

$$= \frac{288}{312}$$

$$= 0.92$$

$$A = \cos^{-1}(0.92)$$

Date: _____

Q#08

(a)

Solution

Total distance walked

$56 + 10 + 5 = 71$

Hiker ends up 11.18 km

(b)

Add all shares

$12F + 24F + 8F + 2F + F + F = 48F$

$48F = 9000$

$F = \frac{9000}{48}$

$F = 187.5$

Total Amount = 187.5

A = 2250

B = 4500

C = 1500

D = 375

E = 187.5

F = 187.5

Date: _____

Date: _____

$$\cos(B) = \frac{(5)^2 + (13)^2 - (12)^2}{2\,(5)\,(13)}$$

$$= \frac{25 + 169 - 144}{130}$$

$$\cos(B) = 0.384$$

$$B = \cos^{-1}(0.384)$$

$$\cos(C) = \frac{(5)^2 + (12)^2 - (13)^2}{2\,(5)(12)}$$

$$\cos(C) = \frac{25 + 144 - 169}{120}$$

$$C = \cos^{-1}(0)$$

$$\boxed{C = 45^\circ}$$

(b)

Solution

Add ratio parts:

$1 + 2 + 3 + 4 + 5 = 15$

Divide total savings by total ratio parts:

$$\frac{25000}{15} = 1666.67$$

Smallest Share ratio is "1" so

$1 \times 1666.67 = \boxed{1666.67}$

Answer

Date: _____

(c)

(i)

The sequence follows a pattern of multiplying by 3

$2 \times 3 = 6$

$6 \times 3 = 18$

$18 \times 3 = 54$

$54 \times 3 = 162$

"486" doesn't fit in series Answer!

(ii)

This is a sequence of prime numbers.

~~2~~, 3, 5, 7, 11, 13, 17, 19

Next prime number is "17"

Answer!