

Day: _____

MOCK TEST

Date: _____

Name: NOOR FATIMA

SUBJECT: GENERAL SCIENCE
AND ABILITY.

Q No. 3

(a)

i- Cells form organelles

i- Why cells form organelles?

The reason behind formation of organelles by cell is as follows:

Cell

Basic unit
of life

Therefore, it form organelles
to perform the tasks necessary
for the sustenance of
life

For example

Some of the organelles formed by cells for special tasks are as follows

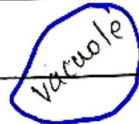
Nucleus

possess DNA
for reproduction



Vacuole

for
water
storage



Ribosomes

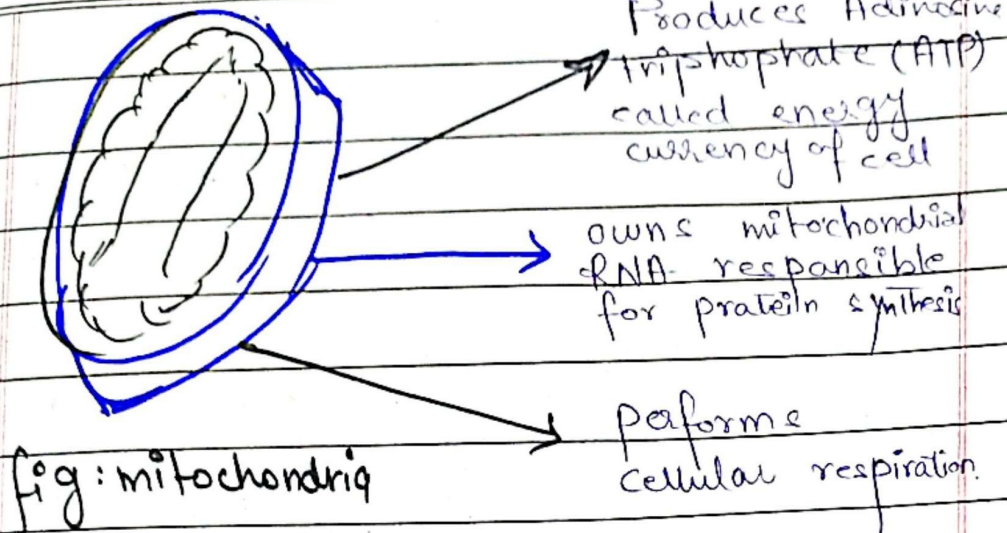
for
protein
synthesis



ii- Role of Mitochondria in human cell

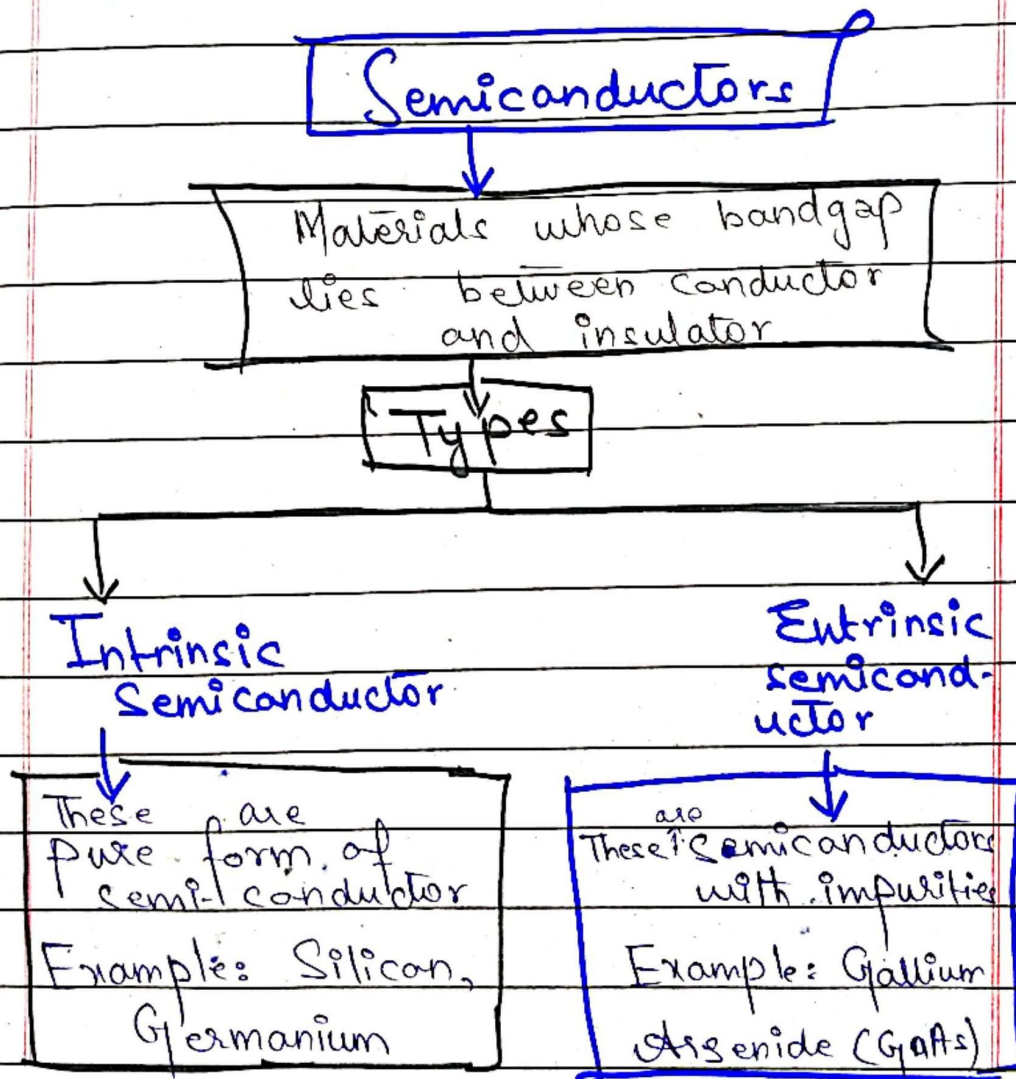
Mitochondria ~ power house of cell.

- a- an important organelle in human cell
- b- plays role in important processes



(b)

a- Semiconductors and their types.



b- Doping

Doping

It is the process of adding impurities in semi-conductors

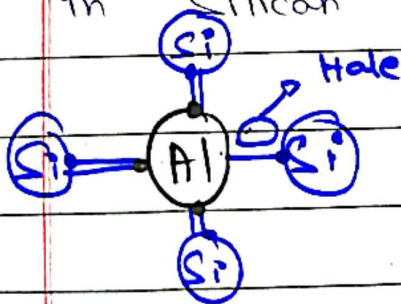
Types of Doping

p-type doping

- a- addition of trivalent (Groups 3) impurities in semi conductor.
- b- This type of doping leaves a hole

Example

Addition of Aluminium in Silicon

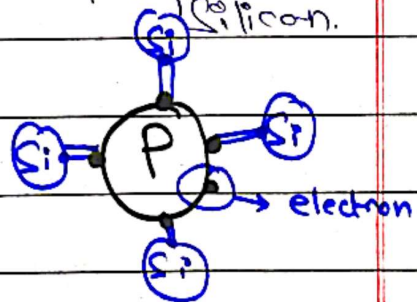


n-type doping

- a- addition of pentavalent (Groups 5) impurities in semi-conductor
- b- This type of doping leaves an electron

Example

Addition of Phosphorous in Silicon.



(c)

Volcanic Eruption

Sudden release of magma from mountains due to tectonic activity

(i)

Merits

- a- Formation of new landscapes
- b- Creation of aesthetic scenario enhances tourism opportunities as in Cappadocia, (Turkey)
- c- Provides agriculture opportunities

(ii)

Demerits

- a- Causes human loss.
- b- Causes economic loss by the destruction of infrastructure

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- c- Greenhouse emissions contribute in economic degradation
- d- Causes Earthquakes and other natural disasters

(d)

Dengue

It is a type of fever caused by biting of dengue mosquito

Symptoms

Temperature rise

Pain and loss of muscles

Severe cold attacks

It can lead to

Paralysis

Death

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Causative Agent

Dengue virus

Vector

Mosquito

Mosquito bite

Transmission mode

Remedies

Treatment through oral medication

Fever treatment through paracetamols to avoid serious results.

(Q No. 5)

(a)

Causes of Population Explosion in Pakistan

i- Lack of social awareness about population control and contraceptives

ii- Lack of coherent policy-making and implementation at political level

iii- Socio-religious stereotypes regarding population control

Strict reaction of society and clergy on early marriage bill (Dawn)

Causes

iv- Economic exploitation of children for economic gains inhibit population control.

Pakistan is third largest country regarding child labour (ILO Report)

v- Lack of Gynae health facilities in rural areas

60% of rural areas does not have lady health workers in Pakistan (PIDF policy Brief)

Measures to control population explosion

Seminars, webinars and social media campaign can educate people about population control

A uniform policy is required at political level for population control. China's population control policy is a successful case study.

Role of clergy and influencers in breaking population-based stereotypes is essential.

Eradication of urban-rural health divide is necessary to provide population control aid.

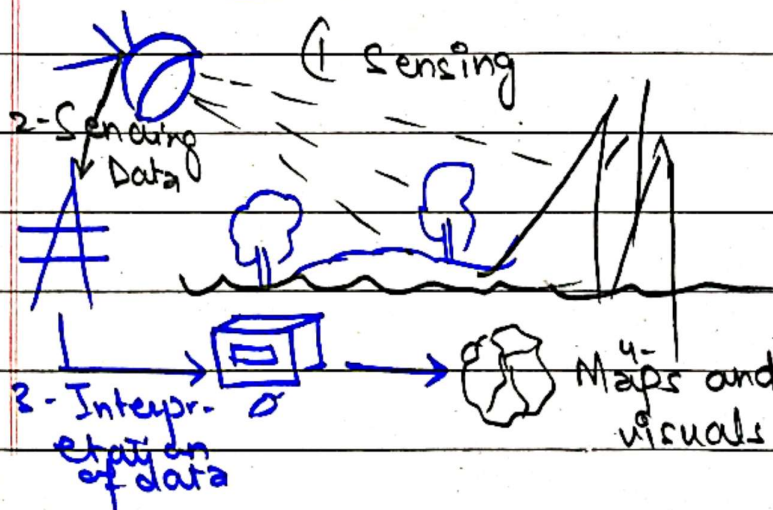
(b)

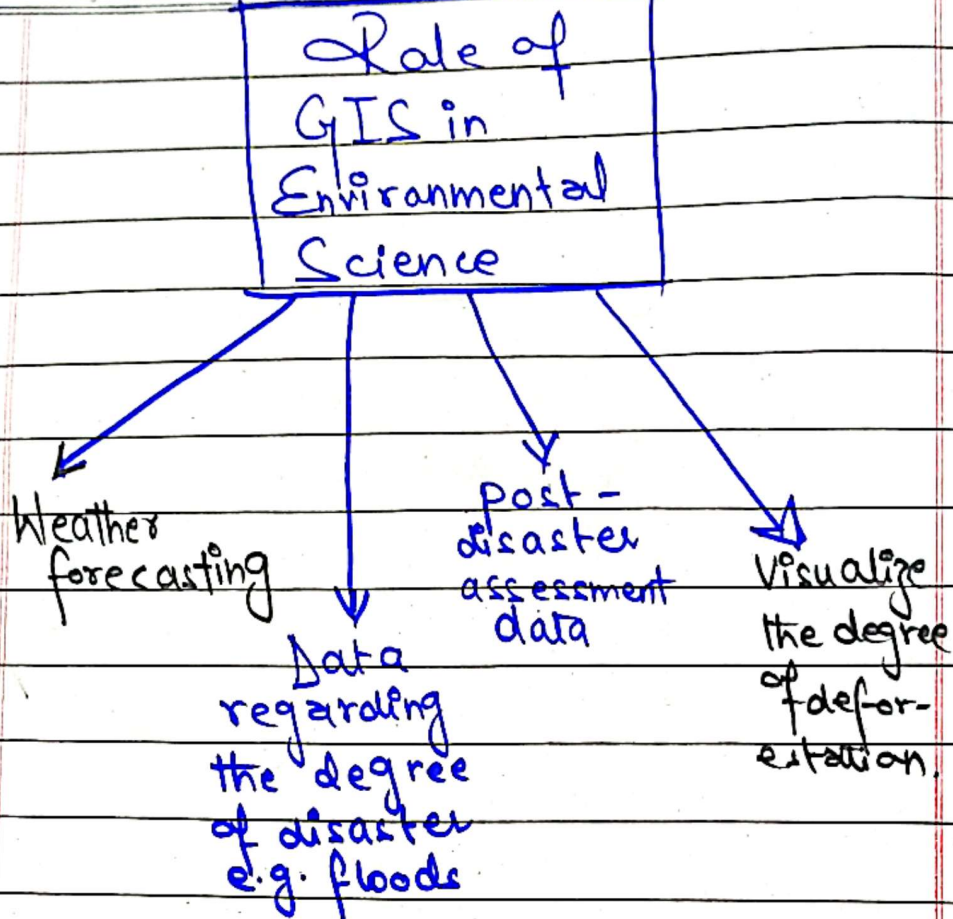
Remote Sensing

It is defined as the use of satellites to gather information about Earth through satellites.

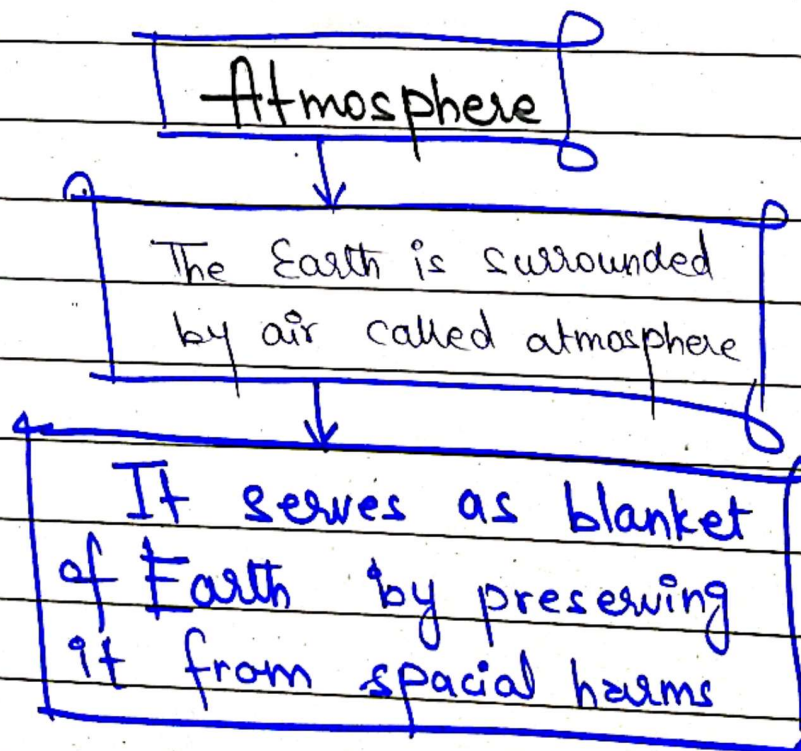
The information gathered by remote sensing is analyzed, interpreted and presented in the form of map and visuals.

The whole system is known as **Geo Information satellite**.





(C)



Justification:

Atmosphere is made up of four layers, each of which play crucial role in preserving Earth.



→ 1-Troposphere is the blanket of essential gases that ensure life on Earth by Green house effect and maintain water balance by cloud formation

→ 2'-Stratosphere owns of one layer which protects Earth from UV rays of sun

→ 3. Mesosphere protects Earth from meteors and asteroids

→ 4. Thermosphere interacts with spacial objects and serves as outer most blanket for Earth.

In this way, Atmosphere serves as blanket of Earth.

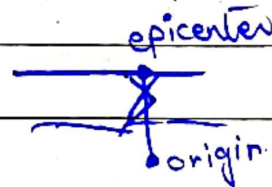
(d)

i) Hydrometer:

It is an instrument used to measure the density of liquids.

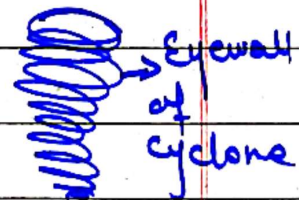
ii) Epicenter:

It is the point vertically parallel to the origin of Earthquake. It bears the highest effect of Earthquake.



iii) Eyewall of cyclone:

The fast motion of wind produces a circular appearance with hollow center. The apparent wall of wind in cyclone is called eyewall of cyclone.



iv) Deep focus:

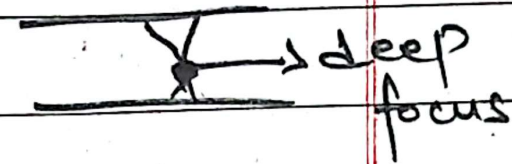
It is the ^{point where} cracking movement of tectonic plates

4)

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give birth to the Earthquake.



v) Light year:

It is the measure of distance that light covers in an year. It is used to measure the distance between astronomical bodies



SECTION-II(QNo.7)

(a)

Step 1: Formula for volume of sphere

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

Step 2: Calculate radius from given diameter

$$D = 14 \text{ cm}$$

$$r = \frac{D}{2} = \frac{14 \text{ cm}}{2} = \boxed{7 \text{ cm}}$$

Step 3: Calculate volume of Sphere

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

$$= \frac{4}{3} \left(\frac{22}{7} \right) (7)^3$$

$$= \frac{4}{3} \left(\frac{22}{7} \right) (343)$$

$$= \frac{4}{3} (1078) = \frac{4312}{3}$$

$$= 1437.33 \text{ cm}$$

Result: The volume of sphere is 1437.33 cm

Row

⑥

49

x 7

343

⑦

49

x 22

98

98 x

1078

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(b)

Step 1: Calculate the total share

$$\text{Sum of ratios} = 5 + 4 + 3 + 2 + 1 = 15$$

Step 2: Get the single share

$$\text{Single share} = \frac{25000}{15} = 1666.66$$

Step 3: Calculate the shares of each friend individually.

$$F_1 \text{ Ratio 1} = 1666.66 \times 1 = 1666.66$$

$$F_2 \text{ Ratio 2} = 1666.66 \times 2 = 3333.32$$

$$F_3 \text{ Ratio 3} = 1666.66 \times 3 = 4999.98$$

$$F_4 \text{ Ratio 4} = 1666.66 \times 4 = 6666.64$$

$$F_5 \text{ Ratio 5} = 1666.66 \times 5 = 8333.3$$

So the friend with ratio 1 has smallest share

(c)

(ii) 3, 5, 7, 11, 13, _____

✓ Step 1: Calculate the difference between each number

$$5 - 3 = 2$$

$$7 - 5 = 2$$

$$11 - 7 = 4$$

$$13 - 11 = 2$$

Step 2: Identify trend

As the trend moves 2, 2, 4, 2, the next number will be achieved by adding 2 in 13

$$13 + 2 = 15$$

Step 3: Complete Series

3, 5, 7, 11, 13, 15

(ii) 2, 6, 18, 54, 162, 486 (spot the error)

Step 1: Identify series pattern to spot the error

$$2 \times 3 = 6$$

$$6 \times 3 = 18$$

$$18 \times 3 = 54$$

$$54 \times 3 = 162$$

$$162 \times 3 = 486$$

Step 2: Spot the error

The series has continued the pattern.

Therefore, all the numbers fit the series

Q No. 6(b)

Step 1: Devise the formula
for total amount

$$\text{Total amount paid} = \text{sale price} - \text{discount} + \text{tax}$$

$$= 200 - 25\% + 6\%$$

Step 2: Simplify the percentages
and solve the formula

$$T.A = 200 - \frac{25}{100} + \frac{6}{100}$$

$$= 200 - \frac{1}{4} + \frac{3}{50}$$

Step 3: Take LCM

$$T.A = \frac{2000 - 25 + 6}{100}$$

$$= \frac{2000 - 31}{100}$$

$$= \frac{1969}{100} = 19.69$$

Total amount paid is \$ 109.69

P.W

$$\begin{array}{r} 100 \\ 1969 \\ \hline 1969 \\ 100 \\ \hline 1969 \\ 900 \\ \hline 690 \\ 600 \\ \hline 900 \\ 900 \\ \hline 1800 \\ \times \end{array}$$

(c)

Step 1: Mention the data

$$\text{Distance} = d = 36 \text{ km}$$

$$\text{Speed} = S = 18 \text{ km/h}$$

Find the time = $t = ?$

Step 2: Write the formula for time

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$

$$\text{Time (t)} = \frac{\text{Dist. (D)}}{\text{Speed (S)}}$$

Step 3: Add values and calculate time

$$t = \frac{36}{18} = 2 \text{ h}$$

The time taken to reach is 2 hours.

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(d)

i) STSATICITS:

STATISTICS

ii) LGEBMAR:

GRAMBLE