

5-June-24

Wednesday

# Mock-I

## General Knowledge-I

### GSA

### PART-II

### (Section - II)

### Question #01

Part a.

The total population of a village increased from 18000 - - - - -

### Solution:-

original population = 18,000  
population after increase = 22,500  
⇒ Given population is increased in a decade

To find:

percentage Increase of population per year = ?

$$\text{Percentage increase in population} = \frac{\text{increase in population} \times 100}{\text{original population}}$$

$$= \frac{22500 - 18000}{18000} \times 100\%$$

$$= \frac{4500}{18000} \times 100\% = \frac{450}{18}\%$$

$$= 25\% \text{ per decade}$$

Hence

Percentage increase in the population of village is  $0.25\%$  in a year

**Part b:**

A soap factory makes 600 units in 9 days with -----

**Solution**

Data #1

600 units of soap were made in 9 days with the help of 20 machines

Data #2

18 machine will made soap in 12 days  
To find the units of soap

Let units of soap are  $x$ .

Units of soap	:	No. of days	:	No. of machines
600	↑	9	↑	20
$x$	↑	12	↑	18

$$\frac{x}{600} = \frac{12}{9} \times \frac{18}{20}$$

$\frac{x}{6}$

$$\frac{x}{600} = \frac{12}{10}$$

$$x = \frac{12 \times 600}{10}$$

$$x = 720 \text{ units}$$

As  $x$  presents units of soap  
 $\therefore$  Soap = 720 units

720 units of soap can be made  
in 12 days with the help of  
18 machines.

## PART : C

A car covers a distance of  
450m in 1 minute - - - -

### Solution:

For car

$$\text{Distance} = 450\text{m}$$

$$\text{Time} = 1\text{min} = 60\text{sec}$$

For Train

$$\text{Distance} = 69\text{km}$$

$$= 69 \times 1000\text{m}$$

$$= 69000\text{m}$$

$$\text{Time} = 45\text{min} = 45 \times 60\text{sec} = 2700\text{sec}$$

$$\therefore \boxed{\text{speed} = \frac{\text{distance}}{\text{time}}}$$

$$\begin{aligned}\text{Speed of car} &= \frac{450 \text{ m}}{60 \text{ sec}} \\ &= 7.5 \text{ m/s}\end{aligned}$$

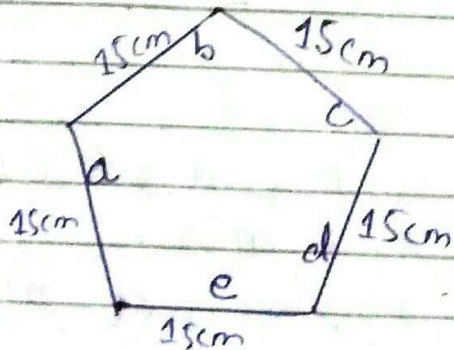
$$\begin{aligned}\text{Speed of train} &= \frac{69000 \text{ m}}{2700 \text{ sec}} \\ &= \frac{230 \text{ m/s}}{9} \\ &= 25.5 \text{ m/s}\end{aligned}$$

$$\text{Speed of car} : \text{Speed of train} = 7.5 : 25.5$$

## PART: D

Find perimeter of a pentagon with each side equal to 15 cm

### Solution:



$$\begin{aligned}\text{Perimeter of pentagon} &= \text{Sum of all sides of pentagon} \\ &= a + b + c + d + e \\ &= 15 + 15 + 15 + 15 + 15 \\ &= 75 \text{ cm}\end{aligned}$$

$\Rightarrow$  Perimeter of given pentagon is **75 cm**

# Question # 2

## Part a.

What is IQ? What are factors which affect IQ?

## Answer

Abbreviation:

IQ: Intelligence quotient

Definition:

IQ refers to a person's intelligence. It is a person's ability to think effectively. Its level varies from person to person, which depends on some factors.

### Factors affecting IQ

#### — Environment

Good environment have positive effects on IQ leading to the high intelligence quotient.

#### — Parenting

During a person's childhood, how his parents treat him have a deep effect on his IQ.

## — Educational background:

A good educational background leads to the high intelligence level.

## — Problem solving Task.

A person will have high IQ level who solve more problems when compared with a person with low 'less' problem solving.

## — Health

Good mental and physical health helps in the high IQ level of a person.

## Part b.

What is the circumference of a circle with radius 4cm?

**Solution:-**

Circumference of a circle =  $2\pi r$

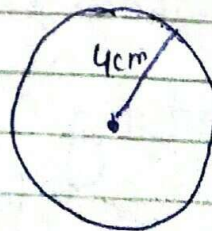
where,

$r$  = radius of circle

Here  $r = 4\text{cm}$

Circumference of the given

$$\begin{aligned}\text{circle} &= 2\pi r \\ &= 2\pi (4)\end{aligned}$$



$$\begin{aligned} &= 8\pi \\ &= 8\left(\frac{22}{7}\right) \\ &= \frac{176}{7} \\ &= 25.14 \text{ cm} \end{aligned}$$

Circumference of given circle is **25.14 cm**

**Part C:**

Ages of 5 students is 20, 22, 21, 21, 23. Find mean, median, mode and range.

**Solution:**

$$\Rightarrow \text{Mean} = \frac{\text{Sum of observations}}{\text{Total no. of observations}}$$

$$= \frac{20 + 22 + 21 + 21 + 23}{5}$$

$$= \frac{107}{5}$$

$$= 21.4$$

$$\text{Mean} = 21.4$$

$\Rightarrow$  **Median**

Arrange the ages in ascending order.

20, 21, 21, 22, 23,

Middle observation is 21  
which is median  
Median = 21

⇒ Mode: the most repeated value.  
In the given data

Age	Students
20	1
21	2
22	1
23	1

Mode = 21

⇒ Range = maximum age - minimum age  
= 23 - 20  
= 3

Range = 3

Part: d

Tahir started a business  
with a capital of - - -

Solution:

Tahir's share	: Umar's share	: Usman's share
15000 × 12	: 30,000 × 7	: 45,000 × 4 ( $\div 1000$ )
15 × 12	: 30 × 7	: 45 × 4 ( $\div 5$ )
3 × 12	: 6 × 7	: 9 × 4 ( $\div 3$ )
12	: 2 × 7	: 3 × 4
12	: 14	: 12
6	: 7	: 6



$$\text{Tahir's share} = 6x$$

$$\text{Umar's share} = 7x$$

$$\text{Usman's share} = 6x$$

$$\text{Total profit} = 406,000$$

$$6x + 7x + 6x = 406,000$$

$$19x = 406,000$$

$$x = \underline{406,000}$$

$$x = \frac{406,000}{19} = 21368.42$$

$$\text{Tahir's share} = 6x = 6(21368.42) = 128210.52$$

$$\text{Umar's share} = 7x = 7(21368.42) = 149578.94$$

$$\text{Usman's share} = 6x = 6(21368.42) = 128210.52$$

# SECTION-I

## Question #01

### Part a.

Enlist the available sources of renewable energy in Pakistan and suggest policy options to utilize these sources to overcome the present energy crisis

## Answer:-

### Renewable energy:

Energy collected from naturally replenished resources on a human timescale.  
Such as wind, tides etc.

# Renewable Energy Sources:

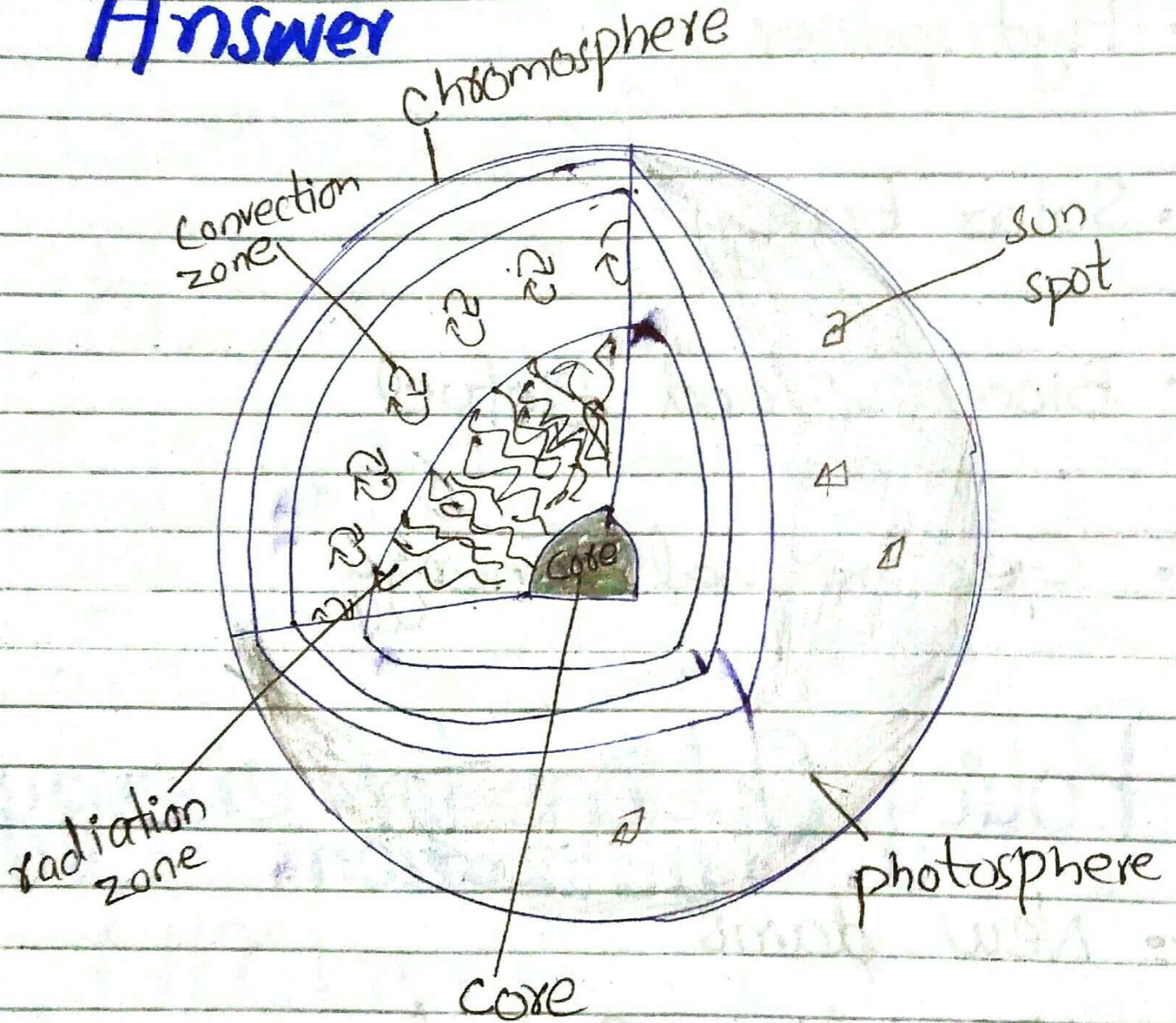
- Wind Power
- Hydropower
- Solar Energy
- Biomass and Biofuel
- Geothermal Energy

# Policy Options for energy utilization.

- New dams
- Population Control
- Politician's Consensus
- Government Far-sightedness
- Active media
- Proper use of natural resources and modern technology

# Part b.

Explain Structure of Sun  
**Answer**



## Part C

What is ceramic material?  
Is it possible that ceramics can be recycled?

### ⇒ Ceramic:

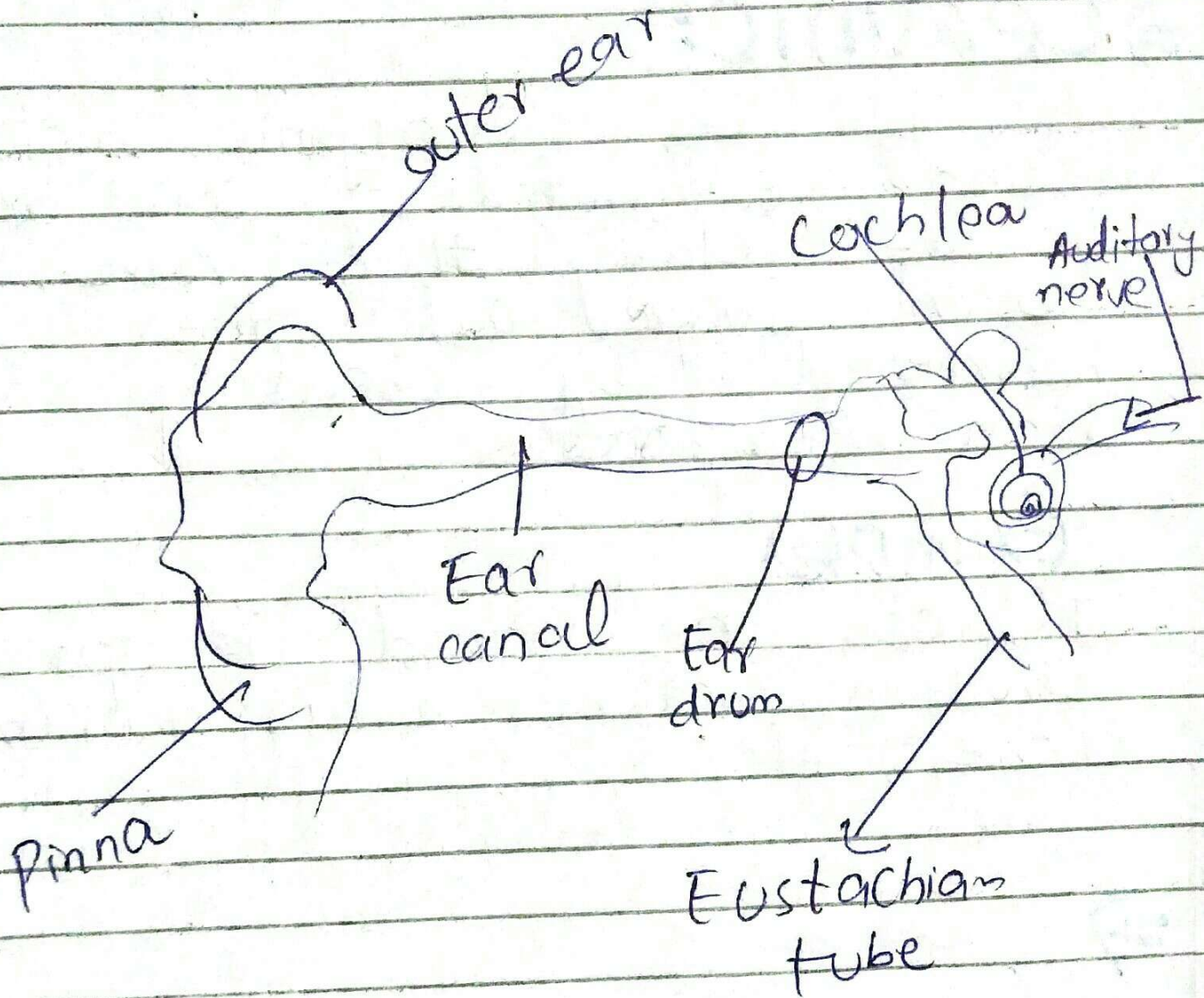
It is an in-organic metallic and non-metallic solid made up of clay that have been shaped and then hardened by heating to high temperature.

### Examples

It can be found in space shuttle watches, airplanes (nose cones) etc.

⇒ Ceramics can be recycled.

# Part d. Ear's Structure



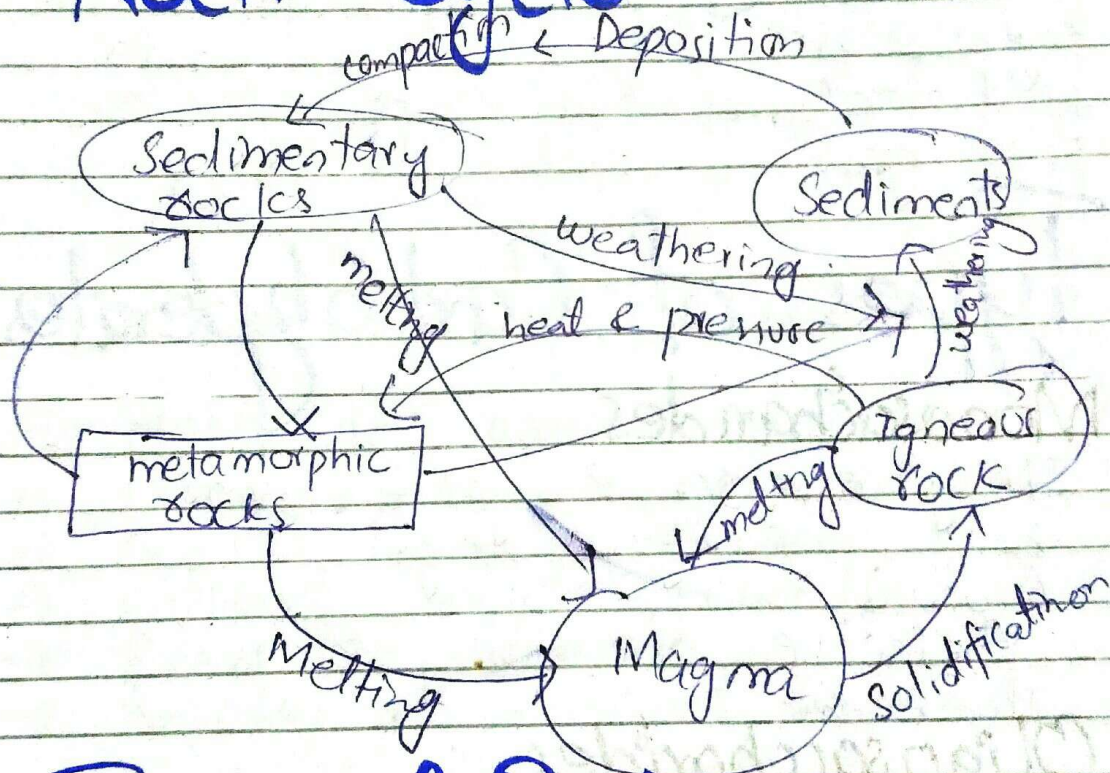
# Question #2

## Part a

Define rocks formation, rock cycle and different types of rocks.

## Answer

### Rock Cycle



### Types of Rocks

1- Igneous

2- Sedimentary

3- Metamorphic

## Part c:

Explain carbohydrates and its types.

## Answer:

### Carbohydrates:

They are the human's body's key source of energy provided 3.79 calories of energy per gram

### Types of Carbohydrates

#### Monosaccharides

They are simple sugar & cannot be hydrolyzed e.g.

- Glucose
- Galactose
- Fructose

#### Oligosaccharides

They are compound sugar that yields 2 to 10 molecules e.g.

- Sucrose
- Lactose
- Maltose

#### Polysaccharides

They are compound sugar and yield more than 10 molecules

e.g. starch, cellulose



Part d:

What are the benefits of balance diet?

Answer

## Balance Diet

A diet that contains adequate amount of all the necessary nutrients required for healthy growth and activity.

## Benefits of Balance Diet

- Helps in weight control
- Keeps a body energized
- Boosts immune system
- Support heart health
- Prevents illnesses
- Provides all important nutrients