

Final Mock Exam
General Science & Ability

Part-II
(Section-A)

Qno-3
(A)

Global warming can be reversed or slowed down by reducing greenhouse gas emission and carbon dioxide absorption.

The main measures include:

1. **Reduction of fossil fuel use**
by shifting to renewable energy sources such as solar, wind, and hydro power.
2. **Afforestation and reforestation,**
which increase the absorption of carbon dioxide from the atmosphere.
3. **Energy efficiency and conservation**
in industries, transport and household to reduce fuel consumption.

4. Use of Clean technologies such as electric vehicles and carbon capture and storage (CCS)
5. International cooperation and environmental policies including agreements like Paris Climate Accord.

These steps collectively help reduce atmospheric greenhouse gases and stabilize global temperatures.

~ (B) ~

Definition:

Ceramics are inorganic non-metallic materials made by shaping and then hardening minerals at high temperatures.

Properties:

Following are the properties of ceramics:

1. High hardness strength.
2. High melting point.

3. Good electrical and thermal insulation.
4. Resistant to corrosion and chemicals.
5. Brittle in nature.

Applications :

Following are the applications of ceramics:

1. Making crockery and tiles.
2. Electrical insulators.
3. Heat-resistant materials in furnaces.
4. Dental and bone implants.
5. Electronic components (capacitors, semiconductors)

~ c ~

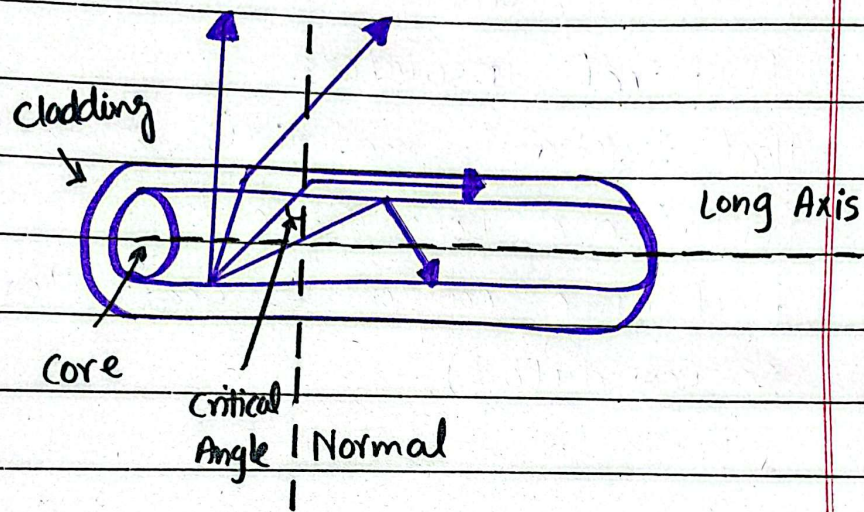
Optical fibre :

Optical fibre works on the principle of total internal reflection. Light signals travel through a thin glass or plastic fibre core. When light strikes the core-cladding boundary at a certain angle,

it reflects back into the core and travels long distances with very little loss.

Use :

Internet communication ,
medical endoscopy , cable TV.

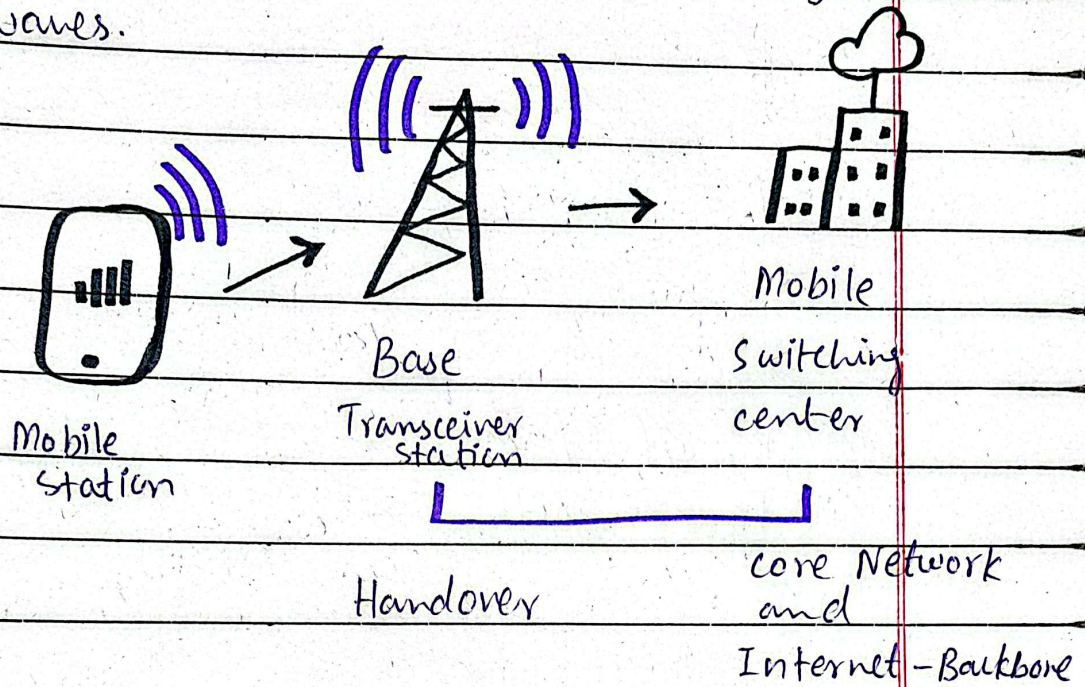


::: Working of fibre Optics

Mobile Phone :

A mobile phone converts voice into electrical signals and then into radio waves. These signals are transmitted to the nearest base station (cell tower), which

routes the call through a network to the receiving phone. The process works through wireless communication and electro-magnetic waves.



Working of Mobile Phone

and D

1. Food Additives:

Substances

added to food to improve taste, color, texture, or shelf life.

Example:

Food colors, flavor enhancers like MSG.

2. Food Preservatives:

Chemicals
used to prevent spoilage by
microorganisms.

Example:

Sodium benzoate, vinegar,
salt.

3. Food Adulteration:

The intentional
mixing of inferior or harmful
substances with food.

Example:

Mixing water in milk,
brick powder in chili powder.

4. Food Contamination:

The
presence of harmful substances
or microorganisms in food
due to poor handling.

Example:

Bacteria in uncovered
food, pesticides on vegetables.

Qno. 4
(A)

The circulatory system consists of the heart, blood, and blood vessels, which work together to transport substances throughout the body.

Role of Heart:

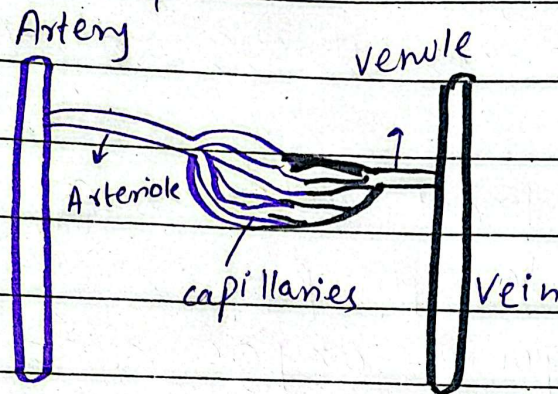
- The heart acts as a muscular pump.
- It pumps oxygenated blood to all parts of the body through arteries.
- It receives deoxygenated blood from the body and sends it to the lungs for purification.
- Maintains continuous blood flow to sustain life.

Role of Blood Vessels:

- **Arteries:** Carry oxygen-rich blood away from the heart.
- **Veins:** Return oxygen-poor blood to the heart.

- **Capillaries**: Allow exchange of oxygen, nutrients, and waste between blood and tissues.

Thus, the heart and blood vessels ensure efficient circulation of blood.



(B)

Cyclone:

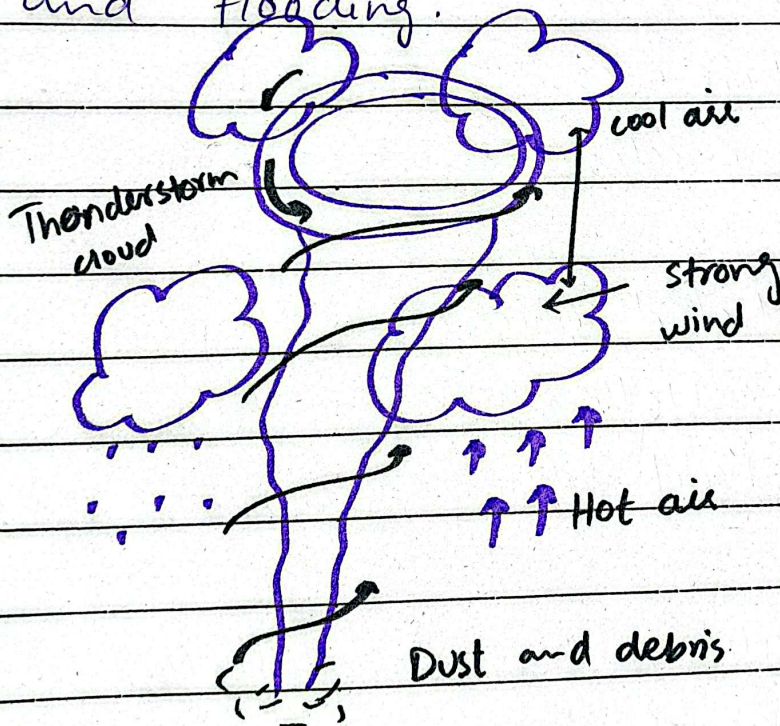
A cyclone is a violent storm characterized by strong winds rotating around low pressure center, usually formed over warm oceans.

Formation of a Cyclone:

- 1- Warm ocean water heats the air above it
- 2- Warm air rises, creating a

- 3- low-pressure area.
- 3- Surrounding cooler air rushes in to fill the gap.
- 4- Due to Earth's rotation, the air starts spiraling.
- 5- As more warm air rises, the system intensifies into a cyclone.

Cyclones often bring heavy rain, strong winds, and flooding.



☐☐☐ cyclone

(C)

Following are the functions of Nutrients:

Carbohydrates

- ✓ Main source of energy.
- ✓ Provide fuel for brain and muscle.
- ✓ Help in proper digestion.

Proteins

- ✓ Essential for growth and repair of tissues.
- ✓ Help in formation of enzymes and hormones.
- ✓ Build muscles and body cells.

Fats

- ✓ Concentrated source of energy.
- ✓ Provide insulation and protect organs.
- ✓ Help absorb vitamins A, D, E and K.

Calcium

- ✓ Strengthens bones and teeth.
- ✓ Essential for muscle contraction.
- ✓ Helps in blood clotting.

Iron

- ✓ Required for formation of hemoglobin.

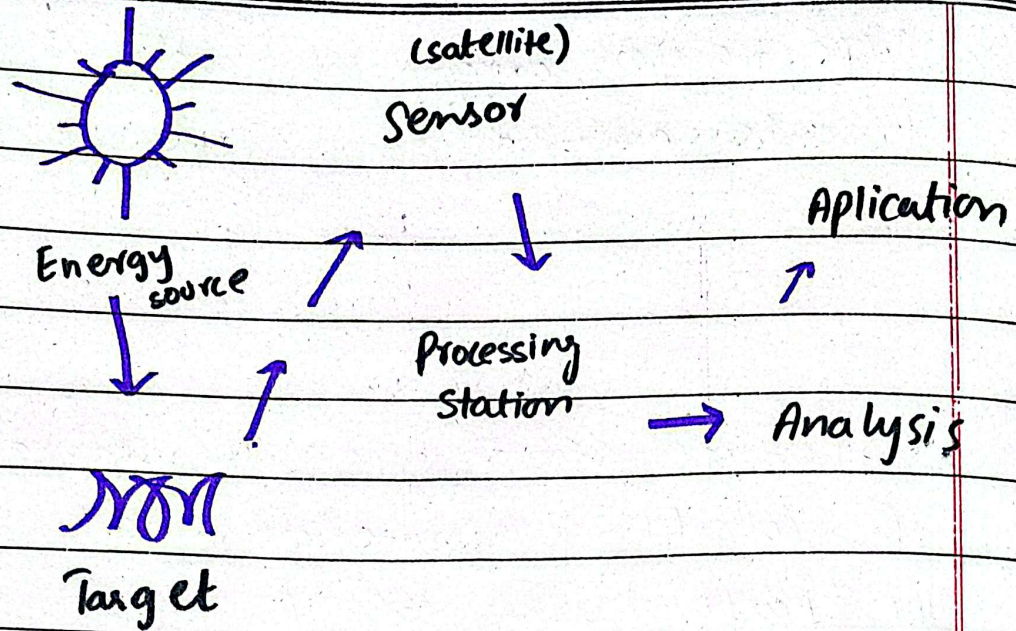
- ✓ Helps transport oxygen in blood.
- ✓ Prevents anemia.

(D)

Remote sensing is the science of collecting information about the Earth using satellites and sensors without direct contact.

Environmental Application:

- 1- Monitoring deforestation and desertification.
- 2- Tracking climate change and global warming.
- 3- Detecting air and water pollution.
Disaster management (floods, cyclones, earthquakes).
- 4- Mapping land use and vegetation cover.
- 5- Remote sensing helps in environmental protection and sustainable planning.



Remote sensing Process

Section - II

Q. No. 6

Q. A

Statement :

"Her grand-daughter is the only daughter of my brother."

We concluded that,

✓ My brother's only daughter
= my niece.

✓ That niece is the granddaughter of the woman.

✓ So, the woman must be the mother of my brother.

So,

the woman is Ahsan's mother.

~ Bp ~

Given :

length : Breadth = 3 : 2

Speed = 12 km/hr

Time = 8 mins

Step 1 : Perimeter of Park

convert time into hours.

$$8 \text{ mins} = \frac{8}{60} = \frac{2}{15} \text{ hours}$$

distance covered in one round

= speed $\times$ time

$$= 12 \times \frac{2}{15} = \frac{24}{15} = 1.6 \text{ km}$$

$$\begin{array}{r} 1.6 \\ 15 \overline{) 24.0} \\ \underline{15} \\ 90 \end{array}$$

Perimeter = 1600 m

Step 2 : Length, breadth

let ,

$$\text{length} = 3x \quad , \quad \text{Breadth} = 2x$$

Perimeter:

$$2(3x + 2x) = 10x = 160$$

$$10x = 1600$$

$$x = 160$$

So,

$$\text{length} = 3x$$

$$= 3 \times 160$$

$$= 480$$

$$\text{breadth} = 2x$$

$$= 2 \times 160$$

$$= 320$$

$$\begin{array}{r} 160 \\ 3 \\ \hline 480 \end{array}$$

$$\begin{array}{r} 160 \\ 2 \\ \hline 320 \end{array}$$

Step 3 = Area

$$\text{Area} = \text{length} \times \text{breadth}$$

$$\text{Area} = 480 \times 320$$

$$\text{Area} = 153,600 \text{ m}^2$$

Q10

Given:

$$\text{L.C.M of two numbers} = 48$$

$$\text{Numbers ratio } 2:3$$

$$\text{So, numbers} = 2k \text{ and } 3k$$

Step 1 : Express LCM in terms of K

LCM of $2k$ and $3k = 6k$

$$6k = 48$$

$$k = \frac{48}{6}$$

$$k = 8$$

Step 2 : Find numbers

$$2k = 16 \quad , \quad 3k = 24$$

Step 3 : Sum of numbers

$$16 + 24 = 40$$

So ,

The sum of numbers is 40.

~~Example~~

~~Example~~

(Qno. 7)

Ans

Given :

40% of first number = $\frac{2}{3}$ of second number

let the first number = x and

Second = y

$$0.4x = \frac{2}{3}y$$

Solve for ratio $x:y$

$$\frac{x}{y} = \frac{2/3}{0.4} = \frac{2/3}{2/5}$$

$$0.4$$

$$\frac{4}{10} = \frac{2}{5}$$

$$= \frac{2}{3} \cdot \frac{5}{2}$$

$$= \frac{5}{3}$$

So, the ratio of first
and second number is
 $5 : 3$.

(B)

Given:

Selling 17 balls = Rs. 720

Loss = cost price of 5 balls

Let the cost price of

one ball = C

Cost price of 17 balls = $17C$

loss = cost price of 5 balls $\rightarrow$ loss = $5C$

We know:

Loss = Cost Price - Selling price

$$5C = 17C - 720$$

$$17C - 5C = 720$$

$$12C = 720$$

$$C = \frac{720}{12}$$

$$C = 60$$

So, cost price of the ball is Rs. 60.

Q2

$$\text{man's age} = S + 24$$

$$\text{Son's age in 2 years} = S + 2$$

$$\begin{aligned} \text{man's age in 2 years} &= S + 24 + 2 \\ &= S + 26 \end{aligned}$$

According to the problem, in 2 years the man's age will be twice his son's age:

$$S + 26 = 2 \times (S + 2)$$

$$S + 26 = 2S + 4$$

$$2S - S = 26 - 4$$

$$S = 22$$

The present age of the son is 22 years.

I

~ (D) ~

Individual typing speeds:

Rashid = 32 pages in 6 hours

$$\text{Speed of Rashid} = \frac{32}{6} = \frac{16}{3} \text{ pages per hour}$$

Kamran = 40 pages in 5 hours

$$= \frac{40}{5} = 8 \text{ pages per hour}$$

Combined speed

CS = Rashid's speed + Kamran's speed

$$= \frac{16}{3} + 8$$

$$= \frac{16}{3} + \frac{24}{3} = \frac{16+24}{3} = \frac{40}{3} \text{ pages per hour}$$

Time to type 110 pages together

Time = $\frac{\text{Total pages}}{\text{Combined speed}}$

Combined speed

$$= \frac{110}{40/3} \Rightarrow 110 \times \frac{3}{40}$$

 $\sqrt[4]{330}$

$$= \frac{330}{40} = 8.25 \text{ hours}$$

Convert 0.25 hours to mins

So, $0.25 \times 60 = 15 \text{ mins}$

They will take 8 hours 15 mins
working together.
