

General Instructions

Mock 6

General Science and Ability

35

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Batch: 111
Date: 21/8/2023
1. Give numbering to headings
 2. Do not write lengthy paragraphs. Write medium sized paragraphs with headings.
 3. Do not use table for comparison and contrast questions.
 4. Draw figures/diagram/flowchart where needed.

- Q9) (A) Land Pollution:
5. Start new question from fresh page.
 6. Write unit of the answer in ability section.

- Degradation of earth's land surface
of land caused by human activities
& their misuse of land resources.
7. Explain mathematical steps and the reasoning for better score.
 8. Change colour scheme for references to give them more visibility.
 9. Manage time well.
 10. Wide page borders are discouraged. Should be reasonable.
 11. Avoid writing wrong references which related to business activities.
 12. Give more weightage to expressly asked part/s of the question.

Destruction of earth's surface and soil that caused by human activities, land pollution is occur when waste is not disposed properly.

Causes of Land Pollution

Causes of Land pollution is following

1) Mining Activity:

Heavy minerals, sulfuric acid and other toxic material leak from mining waste into soil.

2) Industrialization:

Increase in demand of food and shelter, therefore more waste products are produced.

3) Nuclear Waste:

Left over nuclear plant is thrown at the bottom of land.

4) Agricultural Activities:

Farmers often use highly toxic fertilizers and pesticides to get rid of insects, fungi and bacteria from their crops.

5) Sewage treatment:

Large amount of solid waste is left over once the sewage has been treated.

6) Overcrowded Landfills:

Items that can not be recycled become a part of the landfills that destroy the beauty of the city and cause land pollution.

⑧ What are the main goals of the COP27?

Ans: COP27.

COP27 takes place in Sharm El-Sheikh, Egypt and marks 30 years since the (UNFCCC) was adopted and seven years since the Paris Agreement was agreed at COP21. An annual event, the COP (Conference of the Parties) brings together the governments which have signed the (UNFCCC), the Kyoto Protocol or the Paris Agreement world ministers, leaders together agree jointly climate change address and its impacts. With the stippling together for implementation, COP27 will be an African COP, and the first two COPs in the Middle East North Africa (MENA) region. COP26 in 2021 Glasgow, Scotland by the UK and Italy, who

Poor presentation. Avoid writing lengthy paragraphs. Write small paragraphs with headings.

Continue to hold COP presidency until COP27 begins. COP28 will be held in (UAE) in 2023.

Key Issues for Main Goal

- Keep rise global temperature well below 2°C, and ideally 1.5°C above pre-Industrial level.
- Align financial flows with a pathway towards low greenhouse gases emissions and climate-resilient development.
- Strengthen the ability to adapt to climate change, build resilience.

Main Goals:

(c) Role of GIS in environmental science?

GIS (Geographic Information System)

GIS is a computer system that analyzes and displays geographically referenced information. It is used to attached to a unique location.

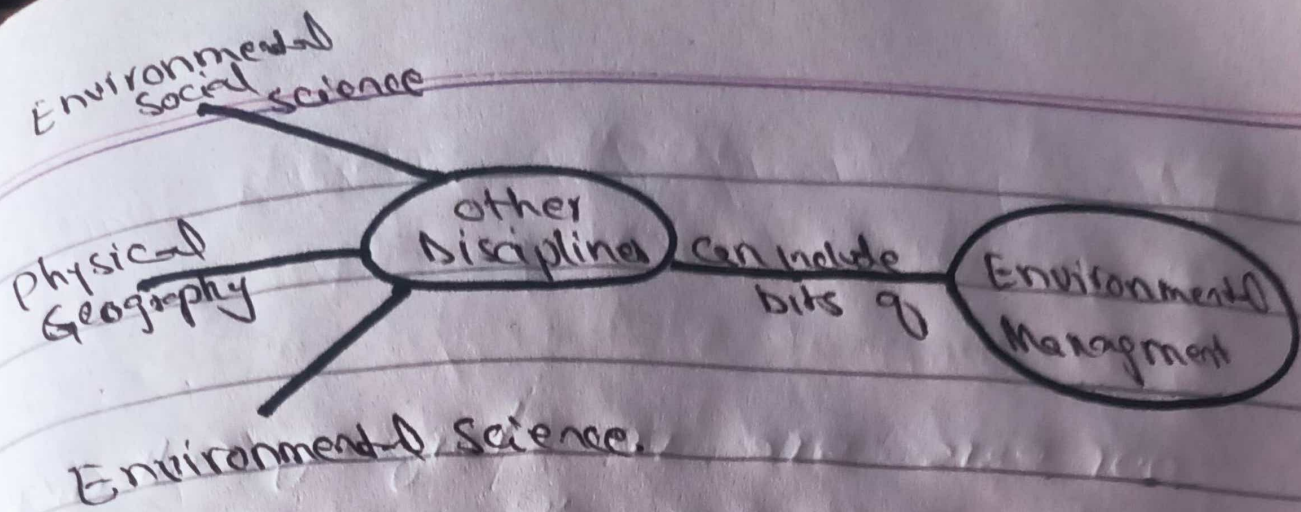
• GIS is a powerful tool for environmental data analysis and planning.

6 A digital basemap can be overlaid with data or other layers of information onto a map in order to view spatial information and relationships.

• GIS observe the level of pollution in water bodies. They can track movement of water in order to know where the water is flowing to.

GIS technology is crucial for creating an inventory of our animals and plants.

• GIS easy makes to monitor the environment using satellite images. satellite images help monitor the resource soil, and habitat of different species.



Q(1) Artificial Intelligence Fundamental

Artificial Intelligence:

AI System composed of two main elements an agent and its surrounding. agent can be human or a machine. agent can be anything that can perceive its environment through sensors and act upon that environment through effectors.

Fundamental:

Machine learning is an application of AI where a computer machine learn from the past experience (input data) and makes further prediction. performance of such a system should at least human level.

No 5

a) Structure and function of Human Ear.

our ears are in charge of collecting sounds, processing them, sending sound signals to brain and that not all ears also help keep balance.

Structure of Ear:

Three different sections:

The outer ear, Middle ear, the inner ^{ear} ~~lower~~. These parts work together so you can hear and process sound.

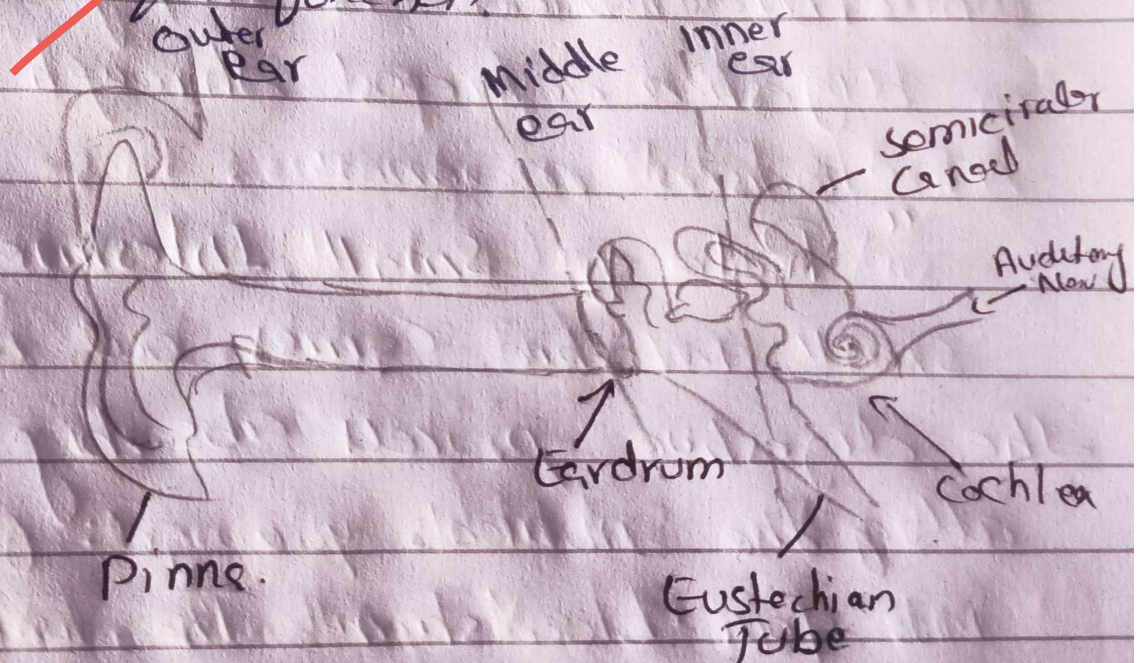
The middle ear structures are involved with hearing only, while the inner ear functions in both equilibrium and hearing. The outer ear consist of an outer funnel like structure called the auricle (pinna) S-shaped tube. Auricle helps to ~~wave~~ collect sound waves travelling through

air and directs them into the auditory
meatus.

Function of Ear;

Function of each part in ear?

The function of the ear is to gather
sound waves and send or transmit
information about sound to your brain. Your
ear has three main sections. The outer,
middle, inner, each section has its
own unique function.



Use of led pencil is not allowed. Only blue and
black colours are allowed.

Human Ear

B) Digestive System:

The process of breaking down food by mechanical and enzymatic action in the stomach and intestines into

substances that can be absorbed by the blood. Digestive chemical mechanical,

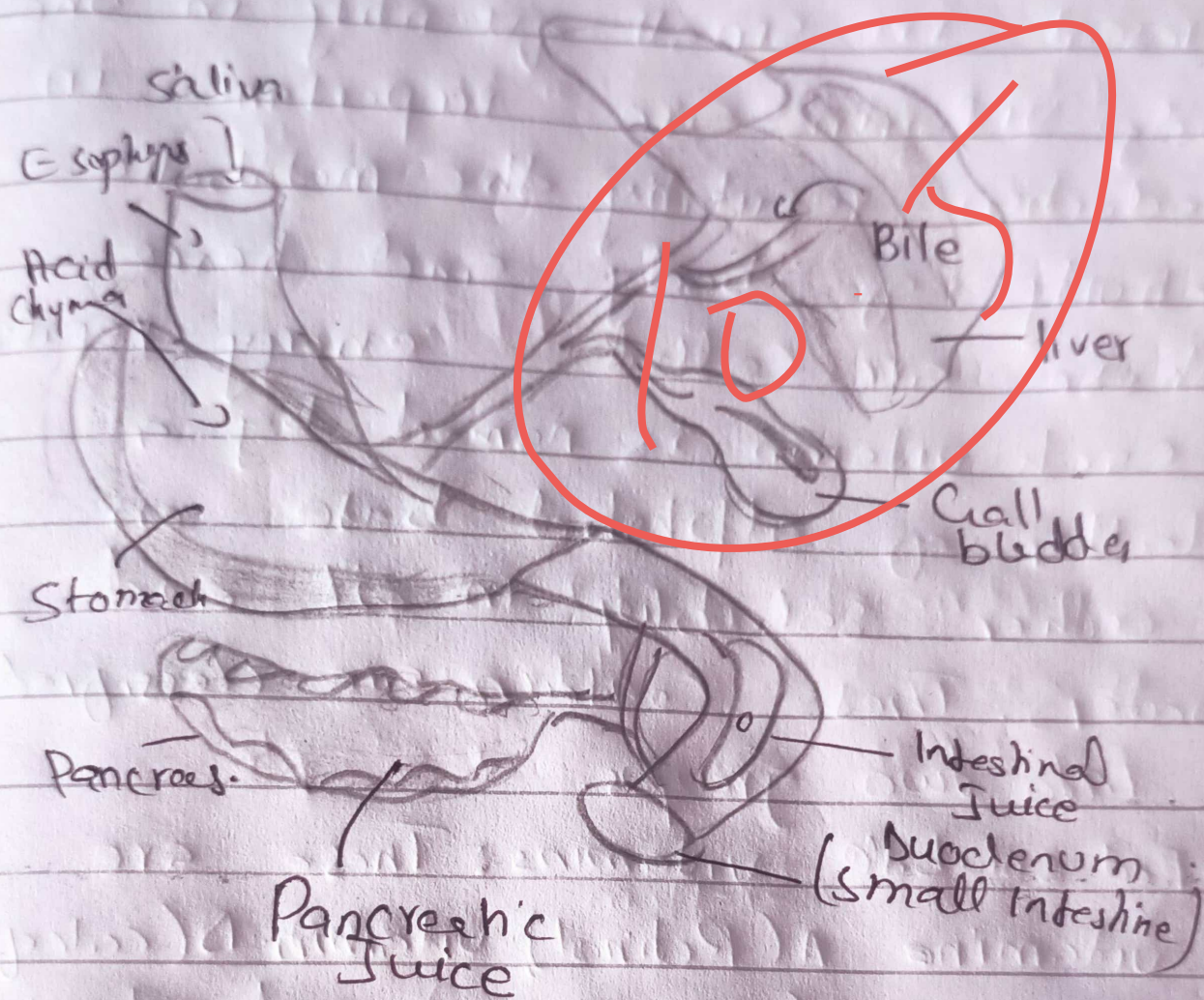
Chemical digestion is the action of

various enzymes and juices secreted while mechanical is simply aspects of digestion achieved through a mechanism movement

" Role of Small Intestine "

Structural parts of intestine and their respective functions?

Small intestine carries out most of the digestive process absorbing almost all of the nutrients you get from food into your bloodstream. The walls of small intestine make digestive juice, or enzymes that work together with enzymes from the liver and pancreas to do this



Digestion

(c) Vitamins Short note:

Vitamins or growth factors are simple organic compounds which are very essential to life. There are

present in small quantity in the body. Vitamins are important in deduction regulating the metabolic activity of body and hence these are called energy regulators. Each vitamin is named by a letter of alphabet base on either solubility in oil and water. These contain are classified into two groups.

- Fat soluble vitamins: These are vitamin A (Retinol), Vitamin D (Calciferol), vitamin E (Tocopherols) and vitamin K.

- Water soluble vitamins:

These are as follows, This includes a number of vitamins which are

as follows; Vitamin B (Thiamine)

Vitamin B₂ (Riboflavin, oil → Biotin) B₂

Folic Acid (Cobalamin)

Chlorine Nicotinic acid

Vitamin C (Ascorbic acid) Niacin.

b) Pituitary Gland Function:

Pituitary gland is a very small oval gland lying at the base of the brain. also called master gland because it controls the secretions of other glands.

divided two sections. Anterior (front) posterior (back) they form different ways.

Function: Maintain homeostasis physiological balance within the body. Secretes chemicals, called hormones that communicate with various organ systems to achieved this

balance. Thyroid stimulating Hormone

Adrenocorticotropic (ACTH) Follicle

stimulating (FSH) Luteinizing (LH)

Prolactin (PRL) Growth (GH)

Somatostatin

Detail missing

(Section - II)

Qob = Identify the Series:

a) i) 10, 100, 200, 310, 430

Reason?

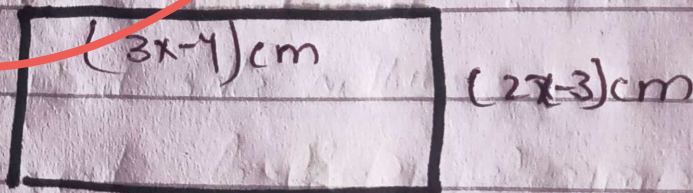
ii) 3, 7, 23, 95, 479

$$\begin{aligned}
 10+10 &= 20 \\
 100+10 &= 110 \\
 200+10 &= 210 \\
 310+10 &= 320
 \end{aligned}$$

$$\begin{aligned}
 3 \times 2 + 1 &= 7 \\
 7 \times 2 + 2 &= 16 \\
 16 \times 2 + 3 &= 35 \\
 35 \times 2 + 4 &= 74
 \end{aligned}$$

b) The perimeter of a rectangle is given below 114 cm.

Find the area of rectangle.



(2x+y) cm.

= 113.98 cm²

Area = 114 cm²

Answer:

$$\begin{aligned}
 AB &= 3x-4 \\
 CD &= 2x+y \\
 AB &= CD
 \end{aligned}$$

$$\begin{aligned}
 3x-4 &= 2x+y \\
 3x-2x &= 4+y
 \end{aligned}$$

Perimeter add

$$\begin{aligned}
 3x-4 + 2x+3 &+ \\
 2x+y + 2x-3 &- \\
 \hline
 = 9x-6
 \end{aligned}$$

$$\begin{aligned}
 9x-6 &= 114 \\
 9x &= 114+6 \\
 &= 120 \\
 x &= \frac{120}{9} = 13.33 \text{ m}
 \end{aligned}$$

$$\begin{aligned}
 x &= 2y \\
 \text{But } x &= 2y \\
 y &= x \\
 x &= \frac{15-33}{2} = 6.66
 \end{aligned}$$

c) Nisha is 15 years elder to Romi.

If 5 years ago, Nisha was 3 times as old as Romi, then find Nisha present age.

Sol

Present age of Romi x

Nisha 15 years elder than Romi

• Present age of Nisha $= (x+15)$

• Nisha age 5 year ago $= (x+15-5) =$
 $x+10$

Romi age 5 years ago $= (x-5)$

5 years ago, Nisha was 3 times as old as Romi

$$\Rightarrow (x+10) = 3(x-5)$$

$$= 2x = 25$$

$$x = 12.5$$

Romi age = 12.5 years

Nisha age = $(x+15)$

$$(12.5+15) = 27.5 \text{ years}$$

So, present age of Nisha

Years (27.5) Ans.

d) 210 oranges, 252 Apples and 294 pears equally packed in Cartons so that no fruit is left, what is the biggest possible number of Cartons needed?

Sol

$$\text{Oranges} = 210 = 2 \times 3 \times 5 \times 7$$

$$\text{Pears} = 294 = 2 \times 3 \times 7 \times 7$$

$$\text{Apples} = 252 = 2 \times 2 \times 3 \times 3 \times 7$$

Common factors

$$= 2 \times 3 \times 7$$

$$= 42$$

Answers = 42 (Biggest possible number of Cartons needed to pack the fruit is 42)

Q8 = (b) Find arithmetic mean of 1st five prime numbers.

Sol First five prime numbers are 2, 3, 5, 7, 11.

Cubes

number of observation = 5

Mean = $\frac{\text{Sum of the numbers}}{\text{No. of observation}}$

$= \frac{2+3+5+7+11}{5}$

$$= \frac{28}{5} = 5.6$$

$$\frac{28}{5} = 5.6$$

Q 8) (c) group of 50 men construct 20km road in 40 days. How long will 70 men take to complete same length road?

| Men | Days |
|-----|------|
|-----|------|

| | |
|----|----|
| 50 | 40 |
|----|----|

| | |
|----|---|
| 70 | x |
|----|---|

| | |
|-----------|-----------|
| <u>50</u> | <u>40</u> |
|-----------|-----------|

| | |
|----|---|
| 70 | x |
|----|---|

$$x/40 = 50/70$$

$$x = 2000/70 = 28.57$$

70 men will take 28.57 days.

Q3 d) Zahid left property worth 1750,000
 His family had to pay off a debt of
 Rs 150,000. The rest of money
 was distributed between a son and
 a daughter. How much did each child
 receive if share of son was double
 than that of a daughter?

Sol //

$$\begin{aligned}
 \text{Total property} &= 1750,000 \\
 \text{Debt} &= 150,000 \\
 \text{Remaining property} &= 1750,000 \\
 &\quad - 150,000 \\
 &= 1600,000
 \end{aligned}$$

Let share of daughter is x
 then share of son will be $2x$

$$x + 2x = 1600000$$

$$3x = 1600000$$

$$x = \frac{1600000}{3}$$

$$x = 533,333.3 \text{ (daughter's share)}$$

$$\text{Son's share} = 2(533,333.3)$$

$$\text{Rs } \boxed{1066666.6} \text{ Answer}$$