

Noa Mock-6 (Test)

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Subject: General Science & Ability

Part - II

Section - I :-

Q4:- a)

What is hepatitis? - - - - - prevention.

Ans 4a):-

Hepatitis:-

Hepatitis is defined as an inflammatory condition of the liver. It is caused by a viral infection or as an autoimmune hepatitis. Autoimmune hepatitis occurs as a result from the consumption of drugs, alcohols etc.

The following flowchart shows the causes, symptoms and prevention of various types of hepatitis.

Hepatitis:-

Type of Hepatitis	Causes	Symptoms	Prevention
1- Hepatitis A and Hepatitis E	Fecal-oral transmission (through dirty water)	Fatigue, abdominal pain, jaundice	Vaccination, safe water and good hygiene practices.
2- Hepatitis B, C and D	Blood or body fluid contact, sexual contact, mother to child transmission, needle sharing	Fatigue, body pain, dark urine, joint pain Cirrhosis (mostly in hepatitis C)	Antiviral medications (costly in nature). Safe injection practices, safe sex practice, screening for pregnant women

From the above types, the viral infections of liver are caused by Hepatitis A, B, C, D and

Hepatitis A is a mild version of disease whereas hepatitis C and D are more severe.

Q4:-b)

Elaborate a few preservation.

Ans 4b):-

Food Preservation:-

It is defined as the method for the preservation of food from spoilage quickly after ~~its~~ harvest or slaughter. Food preservation is practiced from ancient times. For e.g. drying and fermenting etc.

Methods of Food Preservation:-

Method	Description	Examples
1. Salting and Curing	High salt concentration draws out water inhibiting microbial growth. Whereas curing often involves added ingredients	Salted fish, cured meats (salami, pepperoni etc)

2-	Refrigeration and Freezing	Low temperature slows down microbial growth. Freezing halts this growth completely.	Milk, meat, vegetables, dishes.
3-	Canning	high heat kills microorganisms, then sealed in airtight containers.	Fruits, vegetables, soups, meats
4-	Drying	Removing moisture inhibits microbial growth	Dried fruits and grains
5-	Pickling	Preserving in acidic vinegar solution	Pickled pepper and onions (locally called as achaar)
6-	Smoking	Exposing food to smoke containing antimicrobial compounds	Smoked cheeses, fish and meat

Q4:-c):-
Explain fertilizers types?

Ans 4c):-

Fertilizers:-

Fertilizers are defined as any organic or inorganic material that is added to soil in order to supply one or more nutrients that are essential for the growth of plants. The origin of these fertilizers can be natural or synthetic.

Types of Fertilizers:-

Types	Description	Example
1- Based on Nutrient Supplied:-		
a- Nitrogenous fertilizers	Provide nitrogen which is essential for plant growth and development	Urea, ammonium nitrate, ammonium sulfate.
b- Phosphate fertilizers	Provide phosphorous for root development,	Single superphosphate, triple superphosphate,

		flowering and fruit production.	diammonium phosphate.
c-	Potash Fertilizers	Provide: potassium (K) important for disease resistance, water use efficiency and plant health.	Potassium chloride, potassium sulfate.
2-	Organic Fertilizers	Derived from natural sources, provide a slow and sustained release of nutrients.	Manure, compost, bone meal
3-	Biofertilizers	Contains beneficial microorganisms that help plants access nutrients	Rhizobium, mycorrhizae
4-	Micro-nutrient Fertilizers	Provide essential micronutrients like zinc, copper, iron etc.	Chelated iron, copper and zinc sulphates.
5-	Slow-Release Fertilizers	Release nutrients gradually	Coated fertilizers, etc

Q4 d):-
What is human tooth?

Ans 4 d):-

Anatomy of Human Tooth:-

A tooth is composed of several parts:-

1- Crown:-

It consists of 3 parts:-

1- Enamel:-

It is the outermost and hardest layer of tooth. It protects the underlying dentin.

2- Dentin:-

A hard (bony) tissue that forms the bulk of tooth structure. It contains microscopic tubules that transmit sensations to the pulp.

3- Pulp:-

The soft (inner) part of tooth having:-

→ blood vessels

→ nerves

→ connective tissues.

Pulp provides nourishment and sensation to the tooth.

2- Neck:-

It is the constricted portion of the tooth where the crown meets the root.

3- Root:-

It consists of further 3 parts:-

a- Cementum:

A thin layer of bone-like tissue covering the root. It helps anchor the tooth to the periodontal ligament.

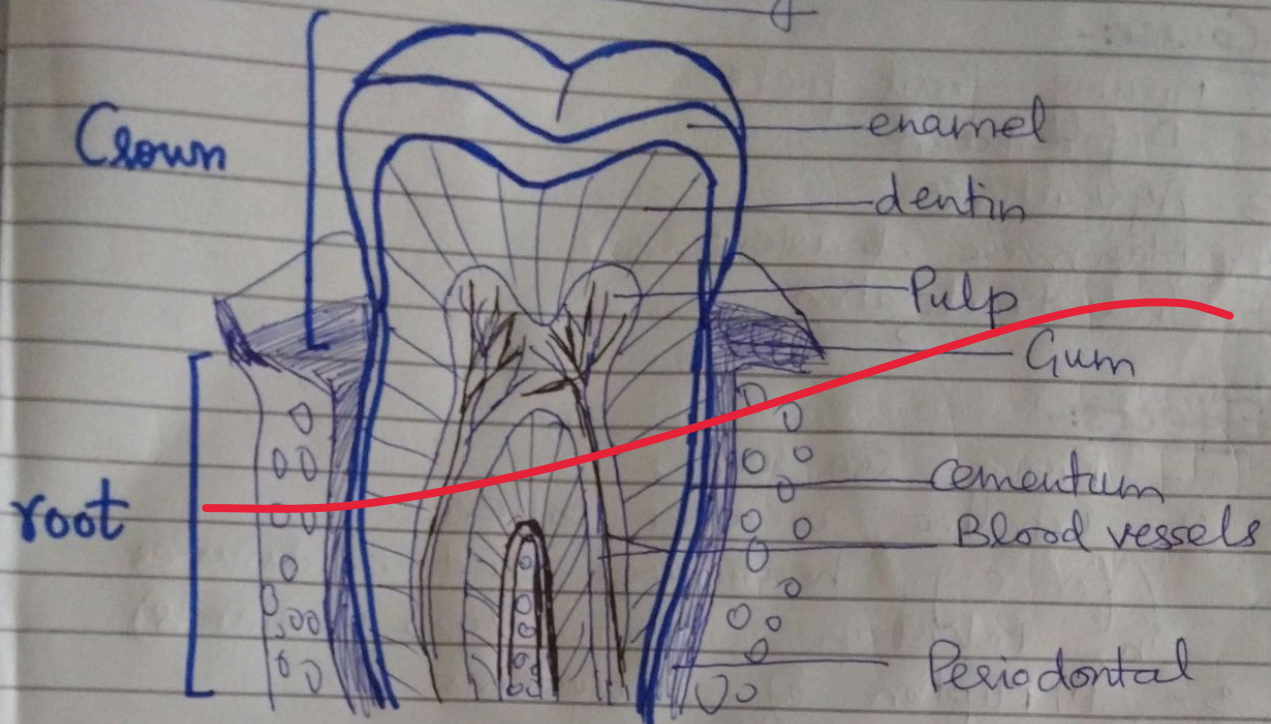
b- Periodontal Ligament:

A fibrous tissue that connects the root to the jawbone, providing support and cushioning.

c- Root canal:-

A narrow channel within the root that contains the pulp.

Tooth Anatomy



Q5:- b):-

b) What is global warming? - - protocol?

Ans 5 b):-

Global Warming :-

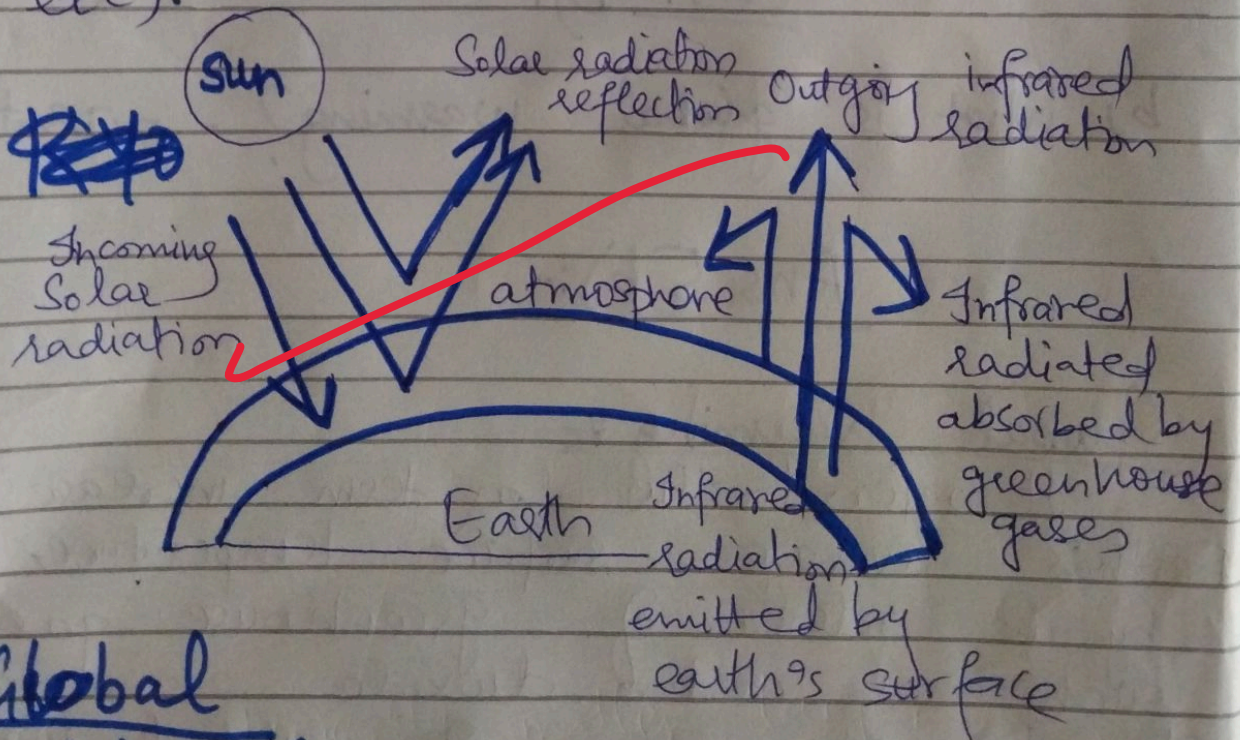
It refers to the long term increase in Earth's average surface temperature, caused by the release of greenhouse gases such as carbon dioxide and methane. In the phenomenon of global warming, these gases trap heat from sun, preventing it from escaping back into space.

Causes:-

- 1- Burning fossil fuels
- 2- Deforestation
- 3- Agriculture
- 4- Man made disasters
- 5- Industrialization

Effects:-

- 1- Rising sea levels
- 2- Extreme weather patterns:
(for e.g. heatwaves and coldwaves in Pakistan from 2022 onwards)
- 3- Distruption of Ecosystems
- 4- Human health issues
(like lung diseases, eye infections etc).



Global Warming

Kyoto Protocol:-

It is an international agreement that aims to reduce greenhouse gas emissions. It was adopted in 1997 and entered into force in 2005. In this, developed countries are legally binding targets for reducing emissions. It defines three flexibility mechanisms

Objectives:-

(JET, CDM & JI).

- 1- To reduce emissions of greenhouse gases for Annex I parties.
- 2- To prepare policies and measures for reducing emissions.
- 3- Establishing an adaptation fund for climate change.
- 4- Accounting, Reporting and Reviewing
- 5- Establishing a compliance committee to enforce compliance with the commitments under the protocol.

Significance:-

- 1- It was a landmark achievement that for the first time made developed countries binding to reduce emissions.

2- It raised global awareness

Limitation:-

1- ~~A limited participation.~~
For e.g. in 2001, US did not ratify the protocol.

2- The compliance system was faced a lack of enforcement.

3- It couldn't prevent climate change.

Q5a):-

Differentiate

Ans 5a):-

Difference b/w Eukaryotic and Prokaryotic Cell:-

Feature	Prokaryotic Cell	Eukaryotic Cell
1- Size	Typically smaller (0.1-5 μm)	Larger (10-100 μm)
2- Nucleus	Absent; DNA DNA is in a nucleoid region	Present, surrounded by a nuclear membrane

3-	Organelles	Lack membrane-bound organelles	Contain membrane-bound organelles e.g. mitochondria etc
4-	Cell Wall	Present in most (made of peptidoglycan)	Present in plants and fungi (made of cellulose or chitin) absent in animals
5-	DNA	Single, circular chromosome	Multiple, linear chromosomes
6-	Ribosomes	Smaller (70S)	Larger (80S)

Q5c):-

Ans 5c):-

GIS:

GIS refers to the Geographical Information System. It is used for capturing, storing, monitoring and displaying data related to the positions on Earth.

Applications:-

It is useful in fields like:-

- 1) Urban planning
- 2) Environmental management

3-Disasters

3-Disaster Management

4- Security Purpose

GIS uses satellite system as well.

~~for~~ ~~compr~~

Q5d):

Ans 5d):-

Antioxidants:-

They are compounds that inhibit or delay ~~at~~ the oxidation of other molecules. They work by neutralizing free radicals, effectively protecting cells from damage.

Sources:-

They are found in fruits, vegetables and nuts.

Examples:-

1- Vitamin C and E

2- Beta-Carotene

3- Selenium

} Antioxidants

Section-II :-

Q7:- b):-

What is the present back?

Ans 7b):-

Solution:-

Let present age of Aman be x
Then, his age before 10 years = $x-10$
and his age after 20 years = $x+20$

We are given, his age after ~~20~~ years
20 years ($x+20$) is 10 times his age
10 years back ($x-10$)

$$\therefore (x+20) = 10(x-10)$$

$$x+20 = 10x-100$$

$$20+100 = 10x-x$$

$$120 = 9x$$

$$120/9 = x$$

$$x = 13.33$$

$$\begin{array}{r} 13 \\ 3 \overline{) 43} \\ \underline{39} \\ 43 \\ \underline{39} \\ 43 \\ \underline{39} \\ 43 \end{array}$$

Hence, the present age of Aman
is 13.33 years.

Q7 c):-
Peter can mow the
..... together?

Ans 7c):-

Solution:-

1 Based on the given data,

$$60 \times 40 \div (60 + 40)$$

2 Finding,

The product or quotient =

$$= 60 \times 40 \div (60 + 40)$$

$$= \frac{2400 \times}{(60 + 40)}$$

$$= \frac{2400}{60 + 40}$$

$$= \frac{2400}{100}$$

4 Calculate the sum or difference =

$$= \frac{2400}{100}$$

5 Ans = 24 min

A person Q7 d):-
multiplied

Ans 7 d):-

Solution:-

Let the number be x
Then according to the given data,

$$\frac{\left(\frac{5x}{3} - \frac{3x}{5}\right) \times 100}{\frac{5x}{3}}$$

$$\frac{\left(\frac{5x \times 5 - 3x \times 3}{3 \times 5}\right) \times 100}{\frac{5x}{3}}$$

$$\frac{\left(\frac{25x - 9x}{15}\right) \times 100}{\frac{5x}{3}}$$

$$\frac{\frac{16x}{15} \times 100}{\frac{5x}{3}}$$

$$\frac{16}{25} \times 100$$

Ans = $\boxed{64\%}$ \rightarrow Percentage Error

Q7a):-
Distinguish b/w I.Q and E.Q.

Ans 7a):-

IQ	EQ
1- IQ refers to Intelligence Quotient	1- Emotional Quotient
2- It measure the cognitive abilities (like critical thinking, perception etc)	2- It measures emotional intelligence.
3- Assesses academic performance	3- Affects interpersonal relationships.
4- Predominantly influenced by genetics	4- Primarily shaped by social and environmental factors.
5- High IQ doesn't guarantee high EQ	5- High EQ complement high IQ.

Q8a):-

The width - dimensions.

Ans 8a):-

Solution:-

Let

x is the length of the room

y be the width of the room

Since

$$60\% = \frac{60}{100} = 0.60$$

$$x = 15 \text{ ft} \text{ --- put in eq (1)}$$

$$\text{So } y = 0.60x \text{ --- eq (1)}$$

Finding the value of y :- ~~put~~

$$y = 0.60(15)$$

$$y = 9 \text{ ft}$$

The area of the room =

$$A = xy$$

$$A = 15 \times 9$$

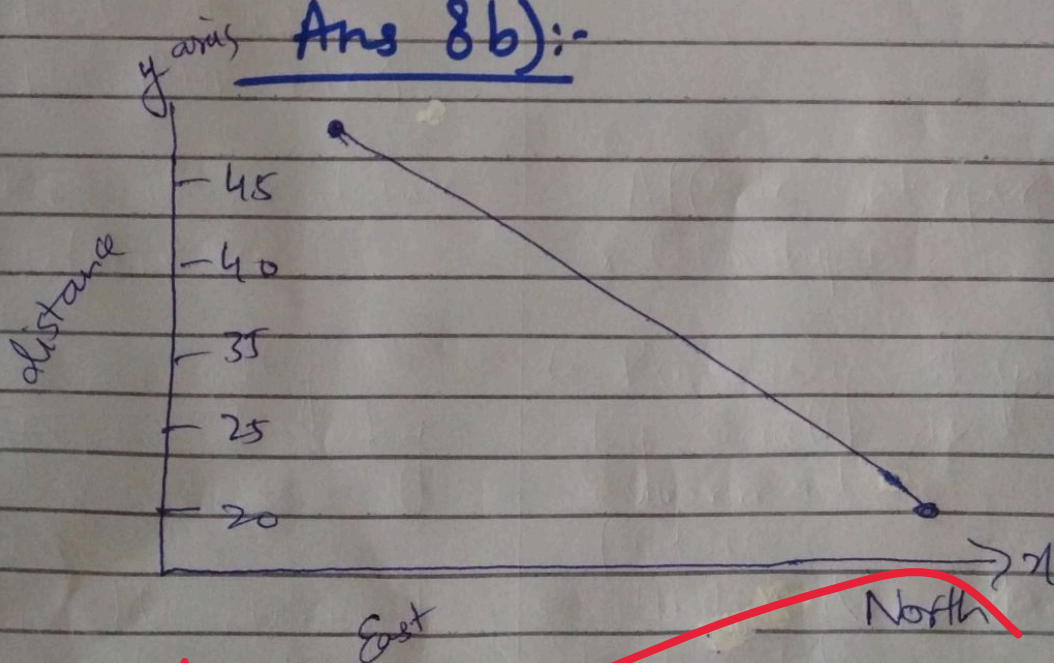
$$A = 135 \text{ ft}^2$$

The room's dimensions = 135 ft^2

Q8 b):-

While at the dog park - - -

Ans 8b):-



$$a = 48 \text{ ft}$$
$$b = 20 \text{ ft}$$

direction

Using ~~hypotenuse~~ Pythagoras Theorem:-

$$(48)^2 + (20)^2 = c^2$$

$$2304 + 400 = c^2$$
$$\sqrt{2704} = \sqrt{c^2}$$

$$c = 52$$

So Veenat if had run directly to the water station, she would have run 52 feet

Explain complex concepts in simple terms.

Use real-life examples to illustrate principles.

Include diagrams and flowcharts to illustrate processes.

Discuss practical applications of scientific concepts.

Show all steps and working for calculations.

Use diagrams and graphs to illustrate concepts.

Understand the question carefully