

## Q. NO. 7. a. Distinguish I. Q and E. Q .

Answer:

	I. Q (Intelligence Quotient)	E. Q (Emotional Quotient)
Definition	• Measure cognitive abilities like reasoning, logic, problem solving.	Measures emotional intelligence such as empathy, self-awareness.
Focus	• Intellectual abilities and academic performance.	Emotional understanding, social interactions, managing emotions.
Assessment	• Standardized tests (e.g. IQ tests).	Behavioral assessments or self-reports
Application	• Success in academics, technical fields	Success in leadership, teamwork, relationships.
Key Skills	• Analytical thinking, memory, logical reasoning.	Emotional regulation, communication, relationship building.

b. What is the present age of Aman, if after 20 years, his age will be 10 times his age 10 years back?

After 20 years, his age will be  $x+20$

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

Ten years ago, his age was  $x-10$

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

$$120 = 9x$$

$$x = \frac{120}{9} = 13.33$$

Aman's present age is approximately 13 years and 4 months.

c.

Peter's rate =  $\frac{1}{40}$  lawns per minute

John's rate =  $\frac{1}{60}$  lawns per minute

Combined rate

$$\frac{1}{40} + \frac{1}{60} = \frac{3}{120} + \frac{2}{120} = \frac{5}{120} = \frac{1}{24} \text{ lawns per minute.}$$

Time to mow 1 lawn together

$$\text{Time} = \frac{1}{\text{combined rate}} = 24 \text{ minutes}$$

Peter and John will mow the lawn together in 24 minutes.

d. A person multiplied a number by  $\frac{3}{5}$  instead of  $\frac{5}{3}$ . What is percentage error in calculation.

Let the number be  $x$

$$\bullet \text{ Correct } x \times \frac{5}{3} = \frac{5x}{3}$$

$$\bullet \text{ Incorrect } x \times \frac{3}{5} = \frac{3x}{5}$$

$$\text{Difference} = \left[ \frac{5x}{3} - \frac{3x}{5} \right] = \left( \frac{25x - 9x}{15} \right) = \frac{16x}{15}$$

$$\text{Percentage error} = \frac{\text{Difference}}{\text{Correct}} \times 100$$

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

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

$$= 64\%$$

Q. No 4.

a. What is hepatitis? Explain its causes, symptoms and prevention.

### Hepatitis :-

Hepatitis is an inflammatory disease of the liver which can result in acute and chronic illness. It can be because of external factors like smoking, alcohol or pollution. But other cause is autoimmune, in which the healthy liver cells starts dying causing the illness of liver. Every 2 out of 10 person has an illness of hepatitis in the world.

### Causes :-

These causes of the hepatitis depends on the type of hepatitis. There are many types of Hepatitis (A, B, C, D and E). Initially the type of Hepatitis is A and the chronic are Hepatitis B and C.

**Hepatitis A :** The cause of the Hepatitis A is infectious fluids or blood and direct contact with the infectious person.

**Hepatitis B:** Hepatitis B is a chronic illness and is caused by transferring of blood from an infected person.

**Hepatitis C:** Hepatitis C is caused by unhygienic sex or contaminated things like razors or any things.

### Symptoms :-

The symptoms of Hepatitis include the initially symptoms as of flu:

- Feeling sick
- Being sick
- Headaches
- Fever upto  $38^{\circ}\text{C}$
- Fatigue

And the chronic symptoms of Hepatitis are

- Fatty liver
- Internal Bleeding
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## Prevention :-

The prevention of the hepatitis includes the safety and precaution of the areas with infected person. The transferring system of blood should be under care for the least transfer. And safe sex can lead to prevent the hepatitis.

b. Elaborate the few methods of food preservation.

Answer:

## Food Preservation :-

Food preservation is an old age process of preserving the food by killing microorganisms and bacteria in the food.

- The old age food preservation includes drying, fermentation, refrigeration.
- The modern age methods of food preservation include canning, irradiation and chemical using.

## Methods of Preservation:-

The preservation of food includes drying, heat, cold, chemical preserved and radiation.

### 1. Drying

The process of drying is an old age method of drying in which the microorganisms dyes dies. As the microorganisms have 80% of water they live one. During the process of drying the water dryout causing the death of microorganisms.

### 2. Heat :-

At the extreme  $121^{\circ}\text{C}$  level of temperature can kill the microorganism in the food, even the little spore in it leading to preservation of food.

### 3. Cold

Under the temperature of  $-10^{\circ}\text{C}$  the all microorganisms get freezeed stopping the multiplication of microorganisms. But the cold process can be not trusted because it cannot kill all microorganisms.

c. Explain Fertilizers. What are their types?

Answer

Fertilizer:-

Fertilizers are a combination of nutrients and minerals required for the fertility of soil. The nutrients and minerals include Nitrogen, Potassium and Phosphorous (NPK). It helps in the production and productivity of the soil.

Types of Fertilizer :-

1. Based on Nutrient Composition

a. Nitrogen Fertilizers

- Essential for leaf and stem growth.
- Examples : Urea, Ammonium sulfate

b. Phosphorous Fertilizers

- For root development and flowering
- Example : SSP (Single super phosphate)

c. Potassium Fertilizers

- Enhance disease resistance and overall plant health.

d. Micronutrient Fertilizers

- Supply trace elements like zinc, boron, copper, iron.



## 2. Based on Source

### a. Organic Fertilizers

- Derived from natural resources
- Examples Compost, Bone meal

### b. Inorganic (Chemical) Fertilizers.

- Synthesized chemically to provide specific nutrients
- Example urea, DAP

## d. What is the anatomy of a human tooth?

The anatomy of a human tooth is composed of several distinct parts, which can be broadly categorized into external and internal structures.

### External Anatomy

#### 1. Crown

The visible part of the gum line. Covered by enamel, which is hardest substance in human body.

The part of the tooth embedded in the jawbone.

### 3. Neck (Cervix)

- The junction between the crown and root, located near the gum line.

## Internal Anatomy

### 1. Enamel

- The outermost protective layer of crown
- Composed primarily of calcium phosphate crystals.
- Protects the tooth from wear and decay.

### 2. Dentin

- Located beneath the enamel and cementum.
- A hard, yellowish tissue that makes up the bulk of tooth.

### 3. Pulp

- The innermost part of tooth.
- Contains blood vessels, nerves and connective tissues.
- Provides nourishment and sensation to tooth.