



General Science And Ability

-:- Part II :-

-:- Section I :-

Question no 5 :-

-:- Part a :-

Give structure and function of Human ear?

Answers:-

- Our ears are incharge of collecting sounds, processing them and sending signals to brain.
- Ears also help to keep balance.

Structure:-

→ The ear is made up of three different

sections:

- The outer ear
- The middle ear
- The inner ear



The outer ear:-

→ It consists of an outer funnel like structure called auricle, an S-shaped tube, the external auditory meatus.

Function:-

→ The auricle of ear helps to collect sound waves travelling through air.

→ later it is sent to tympanic membrane.

→ Sound makes ear drum vibrate, then transfer sound energy to tiny bones and seek vibration.

The middle ear:-

→ It consists of an air filled space having 3 bones called auditory ossicles.

→ The auditory ossicle being smallest bone in the body named according to shape:

- The malleus (hammer)
- Incus (anvil)
- Stapes (stirrup)

→ A Eustachian tube connect middle ear to throat.

Functions:-

→ It maintains equal air pressure on both sides of ear drum.

→ Transfer sound energy of tympanic membrane.



The inner ear:-

→ It consist of a complex system of inter-communicating chamber and tubes called labyrinth.

The Part of the labyrinth includes

- Cochlea
- Semicircular canals
- Vestibule

Function:-

→ Vibrations entering the perilymph cause movements in the fibres of cilia. The fibre generate a message that is sent to brain through auditory nerve.

Part b:-

What is digestive system? What is the role of small intestine in digestion.

Defination:-

→ The process of breaking down food by mechanical and enzymes action in the stomach and intestines into substances that can be absorbed by the blood.



Explanation:-

→ In humans protein must be broken down into amino acid, starches into simple sugar & fats into fatty acid and glycerol.

Types:-

→ Digestion is divided into two types:-

1- Chemical digestion:-

→ is the action of various enzymes and juices secreted in the process.

2- Mechanical digestion:-

→ is simply the aspect of digestion achieved through a mechanism or movement.

Role of small intestine:-

→ It is the largest organ of digestive tract.

It is divided into following sections:-

1- Duodenum:-

→ This is the place where the food digestion reaches its completion. and where the acidity of chyme is nullified.

→ The liver produces bile which is stored in gallbladder until needed.

→ The pancreas produce enzymes like trypsin, lipase, and amylase that digest protein, fats carbohydrates



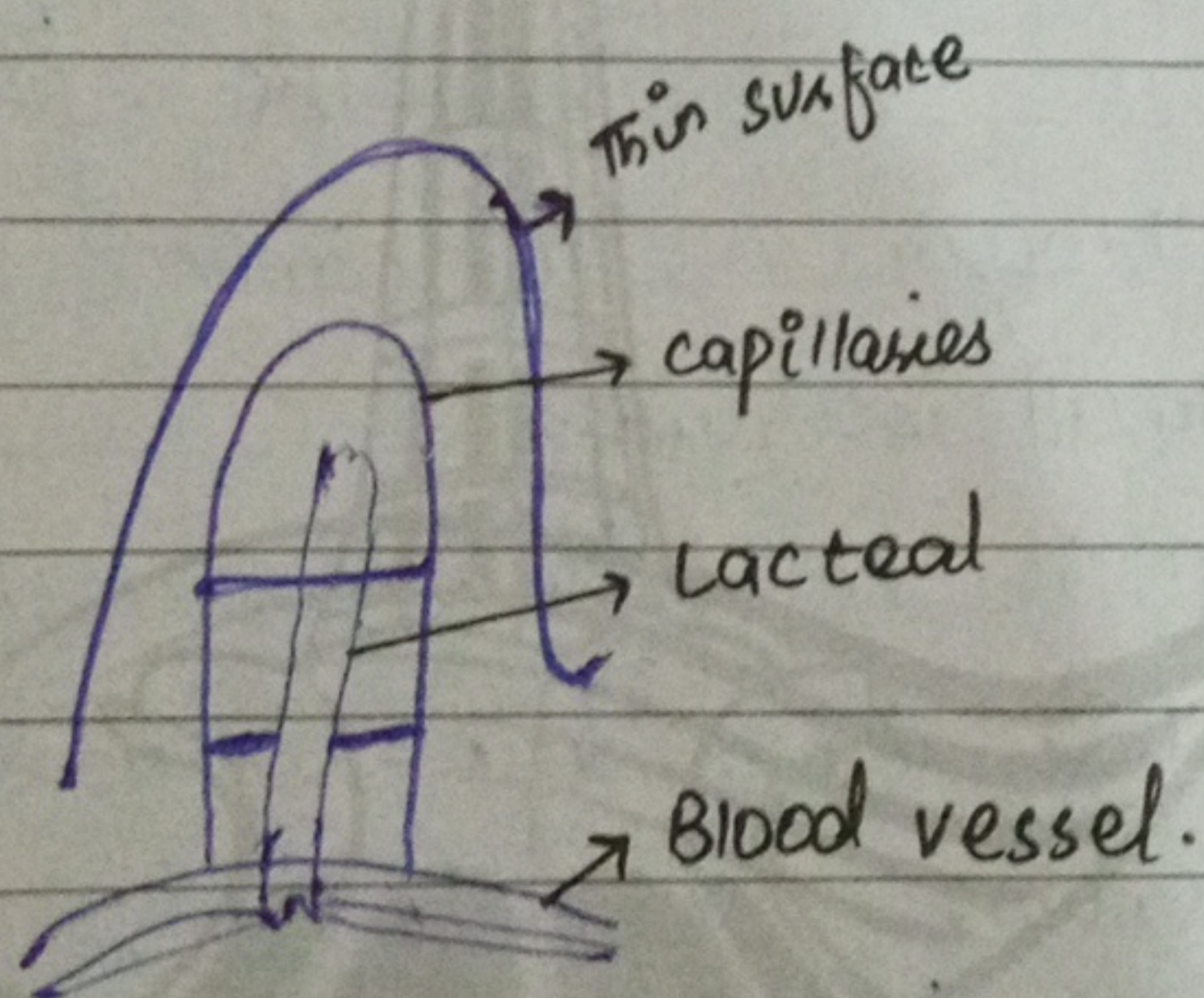
→ Glands in the intestinal walls secrete additional enzymes that break down starches and complex sugars into nutrients that intestine absorb.

→ The blood absorb the nutrients by process of assimilation.

2- Jejunum and Ileum:-

→ Peristalsis pushes the nutrients liquid out of duodenum into Jejunum.

→ Villi (hair-like structure) began to absorb amino acid, sugar, fatty acid and glycerol.

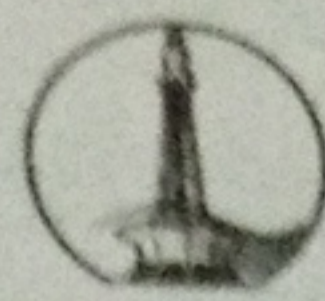


Part C:-

Write a short note on vitamins?

Q1 Definition:-

→ vitamins is any of the organic



compounds that the body requires in small amount to maintain health and function properly.

Types:-

- vitamins are classified into two groups:

fat-soluble vitamins:-

→ It include vitamin A, D, E and K which are usually absorbed by the food that contain fats.

→ Fats containing these vitamins are broken down by bile and then the body absorbs the broken products and vitamins.

→ Excessive fat soluble are stored in body's fat, liver kidney.

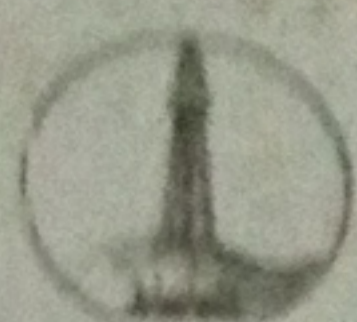
→ These vitamins are not needed to be consumed every day to fulfil body needs.

Water Soluble:-

→ It includes vitamin C and vitamin B complex.

→ vitamin B is composed of eight vitamins together called vitamin B complex

→ It includes B1 (Thiamine) B2 (Riboflavin) B3 (Niacin), B5 (Panthonic) B6, B7, B8 (Folic acid), B9.



- These can't be stored in body
- foods that have water soluble must be taken daily.

∴ Part d :-

Describe the functions of Pituitary Gland?

Definition :-

→ Pituitary gland is a very small oval gland lying at the base of brain. It is also called master gland.

→ It control secretions of other gland.

Types :-

It is divided into two sections

1- An anterior (meaning front)

2- A posterior (meaning back)

Hormones by Anterior Pituitary :-

- Thyroid stimulating hormone
- Follicle stimulating hormone
- Growth hormone

Hormones by Posterior Pituitary gland :-

- Anti diuretic hormone
- Oxytocin



SECTION II

Question no 6:-

∴ Part a:-

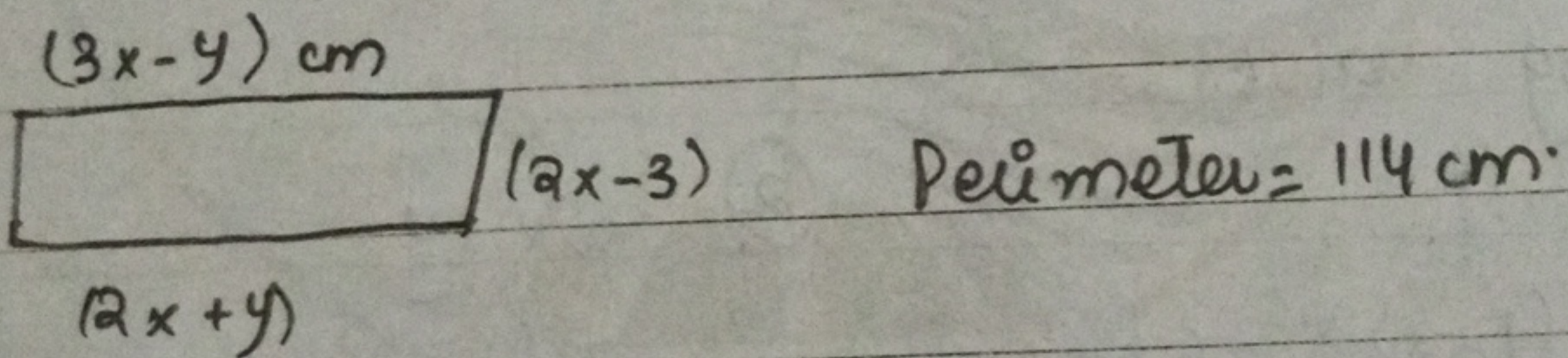
Identify the series :-

i- 10, 100, 200, 310, 619

ii- 3, 7, 23, 95, 9023

∴ Part b:-

The Perim ... -- area of rectangle.



$$\text{Perimeter} = 2(l+w)$$

$$114 = 2((3x-4) + (2x-3))$$

$$114 = 2(5x - y - 3)$$

$$114 = 10x - 2y - 6$$

$$114 + 6 = 10x - 2y$$

dividing eq by 2

$$\frac{120}{2} = \frac{10x - 2y}{2}$$

$$60 = 5x - y \rightarrow (i)$$



opposite sides be equal:-

$$L_2 = L_1$$

$$3x - y = 2x + y$$

$$3x - 2x = y + y$$

$$x = 2y \rightarrow (ii)$$

Putting value of x in (i)

$$5x - y = 60$$

$$5(2y - y) = 60$$

$$10y - y = 60$$

$$9y = 60$$

$$y = 6.6 \text{ cm}$$

putting value of y in (ii)

$$x = 2y$$

$$x = 2(6.6)$$

$$x = 13.2 \text{ cm}$$

Putting values:-

$$(1) \quad 3x - y$$

$$= 3(13.2) - 6.6$$

$$= 33 \text{ cm}$$

$$(2) \quad 2x + y$$

$$= 2(13.2) - 6.6$$

$$= 33 \text{ cm}$$

$$(3) \quad 2x - 3$$

$$2(13.2) - 3$$

$$= 23.4 \text{ cm}$$

$$\text{Area} = L \times w$$

$$= 33 \times 23.4 \text{ cm}^2$$

$$= 772 \text{ cm}^2 \text{ Answer.}$$



Part c:-

Nisha is ----- Present age:

Nisha present age = x

Romi present age = $(x-15)$

Five years ago Nisha = $(x-5)$

Romi = $(x-20)$

Acc. to question:

$$(x-5) = 3(x-20)$$

$$x-5 = 3x-60$$

$$2x = 55$$

$$x = 27.5 \text{ years Answer}$$

Nisha's present age is 27.5.

Part d:-

210 oranges ----- needed?

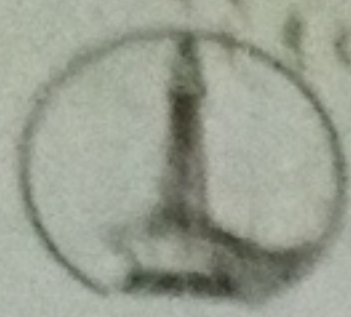
HCF :-

$$210 = 2 \times 3 \times 5 \times 7$$

$$852 = 2 \times 2 \times 3 \times 2 \times 7$$

$$294 = 2 \times 3 \times 7 \times 13$$

Common factor = 2, 3, 7.



HCF = $2 \times 3 \times 7 = 42$. Answer.

The biggest possibility of carrots are 42.

Question 7:-

Part a:-

During sale ---- shirts?

original price of shirt = x .

clerk raised price by 20%.

New price = $1.2x$

New price = 80 high

$1.2x - x = 80$

$0.2x = 80$

$x = 400$ Answer.

original price of shirt is 400.

Part B:-

In a ---- SISTER?

Brother = Q D G S N Q A

SISTER = Q D S R H R

² B	¹⁸ R	¹⁵ O	¹⁰ T	⁸ H	⁵ E	¹⁸ R
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Q	D	G	S	N	Q	A
17	4	7	19	14	15	1

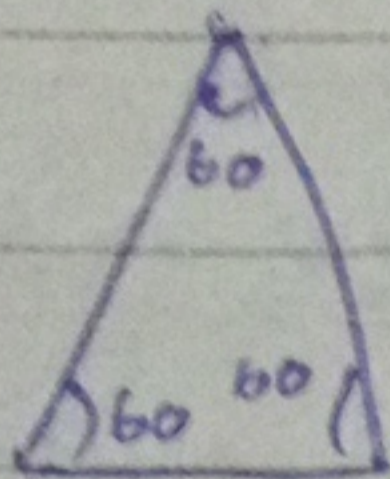


M	9	M	20	C	18
S	1	S	T	E	R
G	D	S	R	H	R
11	4	19	18	B	18

Part c:-

Equilateral triangle:-

It is a triangle in which all three sides are equal and are equal to 60° degree.

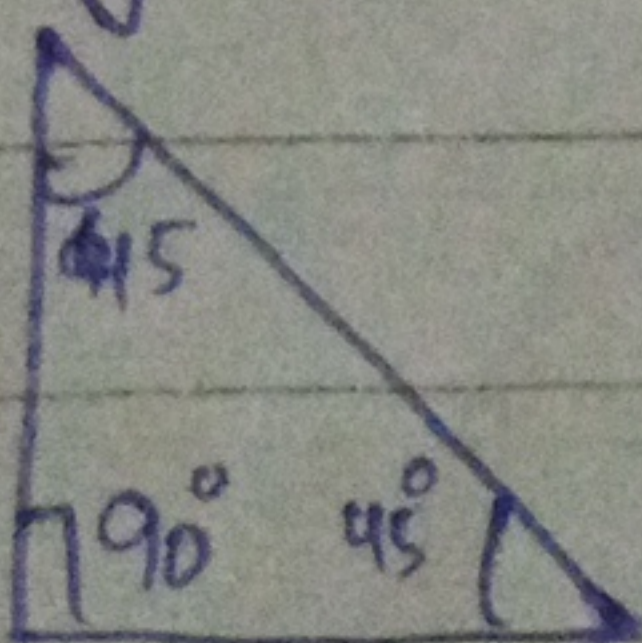


A Triangle isosceles and right:-

A triangle which is isosceles and right at the same time is called 45-45-90 triangle.

Two legs are equal but hypotenuse is twice as each leg.

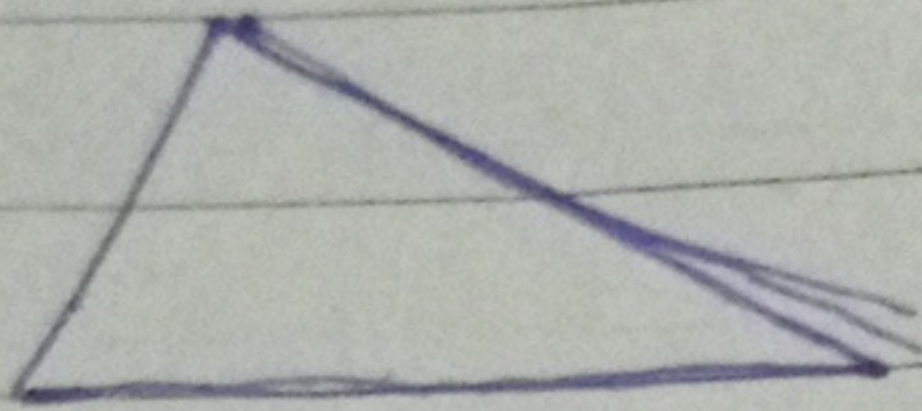
The two acute angle are of 45° and right angle is 90° .





Scalene Triangle:-

A triangle in which all three sides are of different length and angle.



All of different measurements.

Part d:-

A Pizza - - - - Raisin?

$$\text{Probability} = \frac{\text{no. of favourable outcome}}{\text{no. of total outcome}}$$

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

So the possibility of pizza picking a slice with Raisin is $\frac{3}{8}$.