

DAY: Tuesday

DATE: 21-10-25

Syeda Taseed Fatima

NOA-OB-69

Mock-4

Section-II

Qno: 6

(d)

Unscramble the words

(i) STSTAICITS

⇒ Statistics

(ii) LGEBMAR

⇒ GAMBLER

(c)

Given data

Distance = 36 km

Speed = 18 km/hr

starting time = 1pm

To Find

Time it reached = ?

Formula

$$t = \text{Distance} / \text{Speed}$$

Solution

$$\text{Time} = \frac{36}{18} = 2 \text{ hr}$$

Answer

Starting at 1pm, after 2hrs bicycle will reach at 3p.m

(a)

Given Data

$$\text{Ratio} = 3:6:2:5$$

Apple candies exceed date candies by 35

To Find

$$\text{Berry candies} = ?$$

Formula

Multiplying with x

Solution

$$\text{Apple candies} = 3x$$

$$\text{Berry candies} = 6x$$

$$\text{Cherry candies} = 2x$$

$$\text{Date candies} = 5x$$

Apple candies exceed date candies
by 35. So,

$$3x - 5x = 35$$

$$\frac{-2x}{2} = \frac{35}{2} \quad 17.5$$

$$x = -17.5$$

$$\text{Berry candies} = 6x = 6(17.5)$$

$$= 105$$

Answer

If apple candies exceed date candies
by 35 then berry candies will be 105.

DAY: _____

DATE: _____

(b)

Given data

cost price of camera = 200 \$

Discount at camera = 25%

Tax = 6%

To Find

Total amount paid = ?

Formula

Discount = 25% of 200

Solution

Discount on given price = 25% of 200

$$= \frac{25}{100} \times 200$$
$$= 50$$

Total amount - discount price = 200 - 50

price after discount = 150

Tax paid on discounted price = 6%

$$= 6\% \text{ of } 150$$
$$= \frac{6}{100} \times 150 = 9$$

Answer

The total amount paid = 150 + 9

= 159 \$

DAY: _____

DATE: _____

Qno: 7

(a)

Given Data

$$\text{Diameter} = 2r \Rightarrow \text{radius} = \frac{d}{2} = \frac{14}{2} = 7\text{cm}$$

$$\pi = 22/7$$

To find

volume of sphere = ?

Formula

$$\text{Volume of sphere} = \frac{4}{3} \pi r^2$$

Solution

$$\text{Volume of sphere} = \frac{4}{3} \pi r^2$$

$$= \frac{4}{3} \left(\frac{22}{7} \right) (7)^2$$

$$= \frac{88 \times 49}{21 \times 3}$$

$$\text{Volume} = 205.3 \text{ cm}^2$$

Answer

$$\text{volume of sphere} = 205.3 \text{ cm}^2$$

DAY: _____

DATE: _____

(C)

(i) Spot the error : 2, 6, 18, 54, 162, 486

The series 2, 6, 18, 54, 162 is a result of multiplication of 3 with progressive numbers i.e.

$$2 \times 3 = 6$$

$$6 \times 3 = 18$$

$$18 \times 3 = 54$$

$$54 \times 3 = 162$$

But the error lies in last number 486 as following the series, we'll get

$$162 \times 3 = 286$$

Result:

Hence the resulting series will be,

$$2, 6, 18, 54, 162, 286$$

(ii) Complete : 3, 5, 7, 11, 13,

The given series is progression of prime numbers and the next number will be,

$$3, 5, 7, 11, 13, 17, 19, \dots$$

(d)
Given Data

Sides of triangle: 5cm, 12cm, 13cm

To Find

Angles of triangle = ?

Formula

Pythagoras theorem

Solution

To check if triangle is right angled:

$$(\text{Hyp})^2 = (b)^2 + (a)^2$$

$$(13)^2 = (5)^2 + (12)^2$$

$$169 = 25 + 144 = 169$$

It is a right-angled triangle

$$\sin(b) = \frac{\text{Perpendicular}}{\text{height}}$$

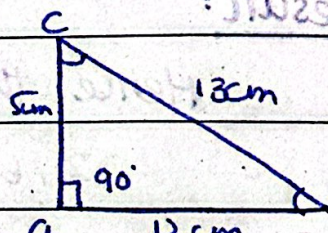
$$b = \sin^{-1} \frac{5}{13}$$

$$b = 22.62^\circ$$

$$\cos(c) = \frac{\text{base}}{\text{height}}$$

$$c = \cos^{-1} \frac{12}{13}$$

$$c = 67.38^\circ$$



Answer

The angles of triangle are

$90^\circ, 22.62^\circ, 67.38^\circ$

DAY: _____

DATE: _____

(b)Given data

Number of friends = 5

Total saving = 25,000 Rs

Ratio = 1 : 2 : 3 : 4 : 5

To find

Smallest share = ?

Formulaone part = $\frac{\text{Total amount}}{\text{Total share}}$ Solution

Total share = 1 + 2 + 3 + 4 + 5

= 15

Smallest share = $\frac{25,000}{15}$

= 1666 Rs

Answer

The smallest share will be Rs 1666.6

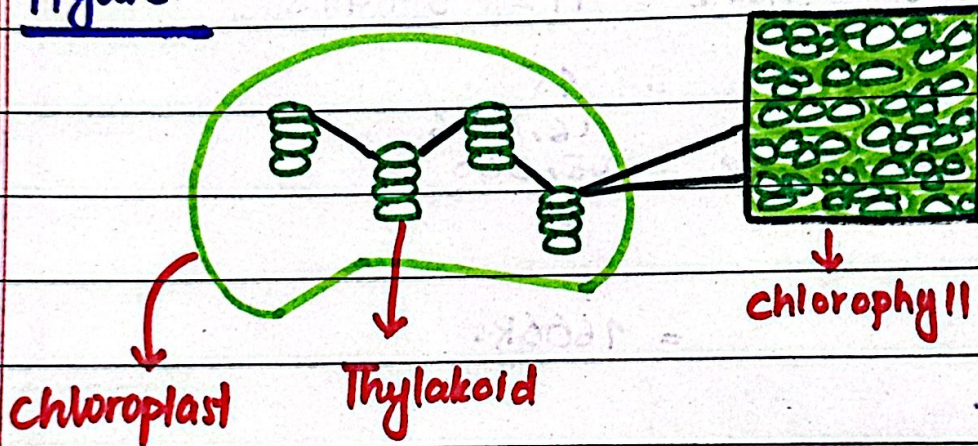
Qno: 4

(A) Chlorophyll

Definition:

A pigment or liquid substance found in plant cells specifically in chloroplast and assist in photosynthesis is known as chlorophyll.

Figure:



Formation of chlorophyll

- Chlorophyll is formed in chloroplast
- Chloroplast contain thylakoid sacks which are responsible for chlorophyll formation
- The formation of chlorophyll is carried out in presence of sunlight.

DAY: _____

DATE: _____

- Sunlight allows plant cells to carry out photosynthesis and formation of Chlorophyll.

Function of chlorophyll

- Chlorophyll is mainly responsible to give green pigment to plants.
- It is abundantly found in green parts i.e. leaves of trees.
- Chlorophyll is also responsible for photosynthesis in plants.
- Chlorophyll contains number of anti-oxidants that help plant in food formation.
- The presence of chlorophyll maintains the life span of leaves.

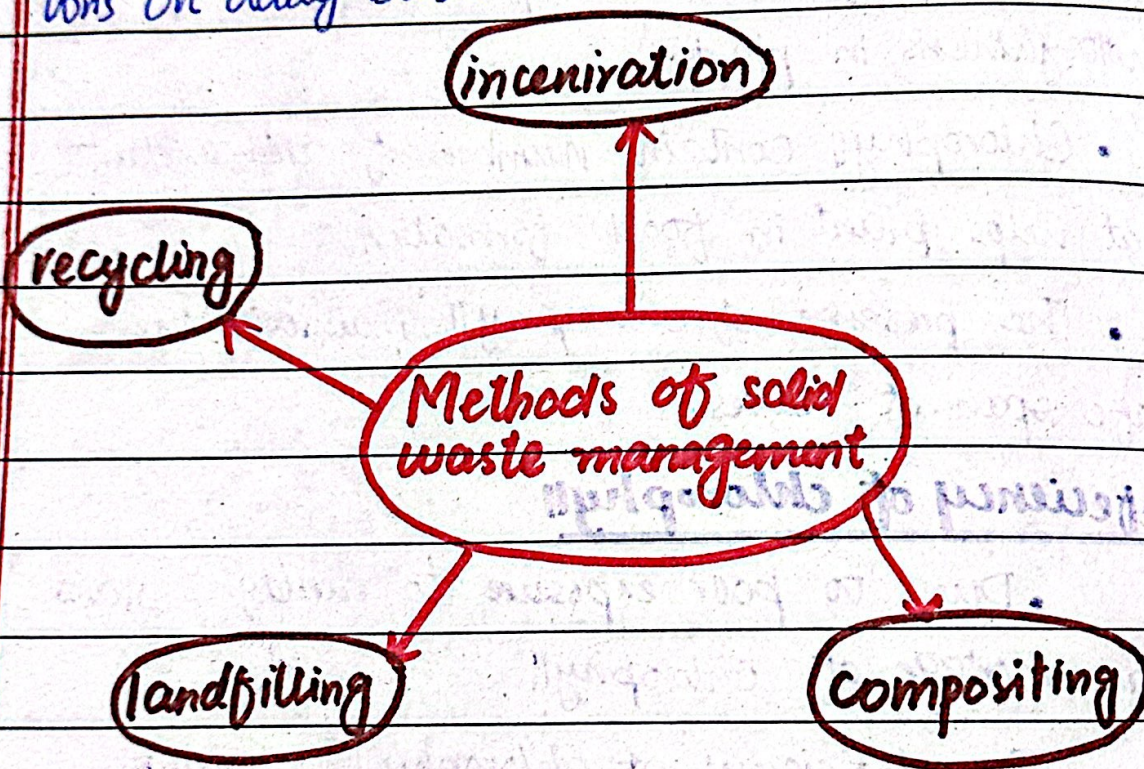
Deficiency of chlorophyll

- Due to poor exposure to sunlight, plants face shortage of chlorophyll.
- The deficiency of chlorophyll in plants decreases the life span of leaves.
- Extreme deficiency of chlorophyll slows down photosynthesis.
- And without photosynthesis, plants die.

waste management

Defining SWM:

The term solid waste management 'SWM' involves a systematic management of waste material excreted in tons on daily basis.

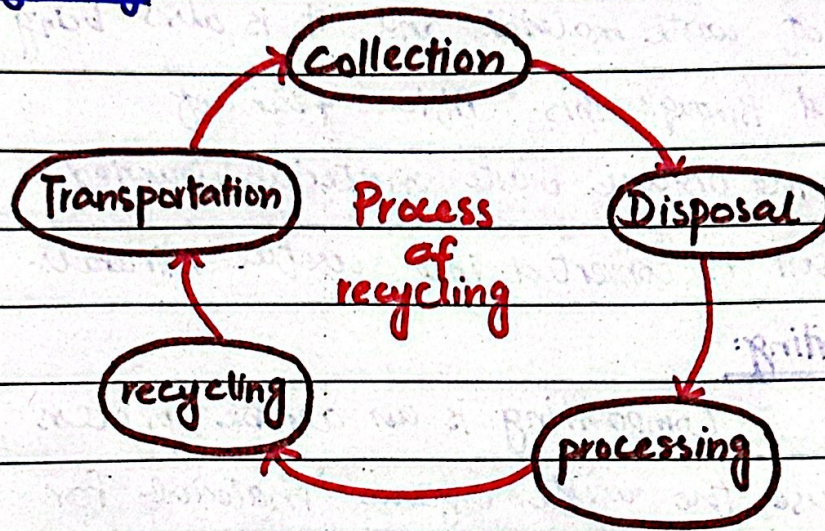


Incineration:

Incineration is the process by which waste material is burned in a controlled amount. The waste material is carried to incineration sites that are far away from urban sites.

and populated areas Here the waste material is incinerated or burned in controlled amount without affecting the environment.

Recycling:



'Re-cycling' means to remake something out of waste material and later use it for some beneficial purpose. Re-cycling can be carried out at domestic levels in homes and can be done at industrial level. The waste is collected and disposed off when it is of no use. Then this waste material is carried to industries. There it is re-cycled through different processes and transform the old waste material into new one. The re-cycled new material is then transported to be reused again for domestic and commercial purposes.

DAY: _____

DATE: _____

Landfilling:

Landfilling is another effective way to manage waste material. A limited amount of waste material is buried under soil. In this way, environment is protected from harmful gases of waste material and it is also being managed through this. After year of process, the organic waste material buried under soil is converted into useful minerals.

Compositing:

Compositing is an aerobic process to re-use the waste organic material. For example, peels of different fruits and vegetables are being used to make organic and plastic-free shopping bags. The animal waste is also used as fuel in rural areas.

(b) Ribosome in protein synthesis

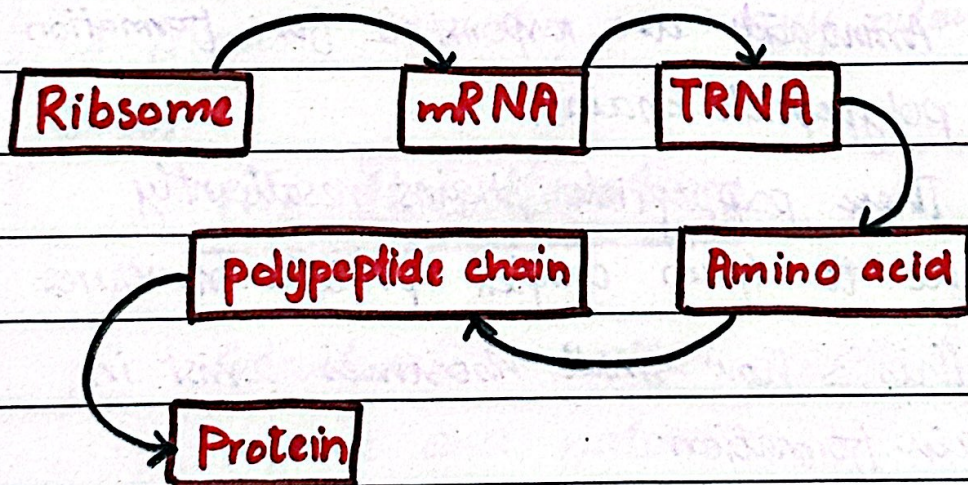
Definition:

Ribosome are the cell organelles that mainly assist in the formation of ribonucleic acid (RNA) in animals.

Role of ribosome in protein synthesis

Protein synthesis is a chain of process that is assisted by the ribosomes.

Formation of proteins (a complex structure) is a long and complex process.

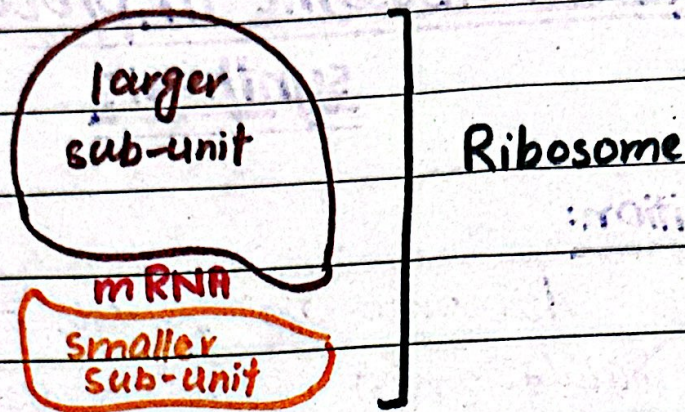


- Ribosomes are the structural unit containing two sub-units: larger sub-unit and smaller sub-unit.

- Between these sub-units there lies mRNA

DAY: _____

DATE: _____



- The mRNA in ribosome is responsible for protein synthesis.
- The mRNA carries the transcription process and copy the information.
- These Transcription process ends in formation of amino acids.
- Amino acids are responsible for formation of polypeptide chains.
- These polypeptide chains resultantly combine to form complex protein structures.
- This is how small ribosomes assist in protein formation.

(d) Defining the terms

(i) Biofuel

The fuel that is attained through biomass and organic waste is known as biofuel. Biofuel is the most common and widely used alternative of fossil fuel. It is used as fuel by the waste from living organisms. The waste from dead and decayed plants and waste from animal is widely used as biofuel specially in many rural areas.

(ii) Adulteration

Adulteration is the process of mixing organic and natural food materials with some other artificial or unnatural products. For example, adding bricks powder in spices, plastics to bubble gum, adding water to milk, adding to colours to juices, etc.

(iii) Hydrosphere

The water blanket of earth or the water bodies present on earth are known as hydrosphere. Water constitute about 97% of earth's portion. This why it is also known as blue planet. This hydrosphere constitute of all the rivers, lakes, oceans, water falls, glaciers, ice caps.

(iv) Troposphere

The air we breath in to the sky we see and the very 1st layer of earth's atmosphere that extends from 0km to 18km and contains higher concentration of oxygen and nitrogen is known as troposphere.

(v) Isotopes

Isotopes are the atoms of the same element that contain similar number of proton but different number of neutrons. E.g isotopes of hydrogen are protium, deuterium and Tritium.

Qno: 3(a) Why cell form organellesWhat is cell?

Cell is the basic structural and functional unit of living organism.

Formation of organelles:

Just like cell combine to make tissues, organelles combine to make a cell and perform all the basic functions.

Why cell form organelles:

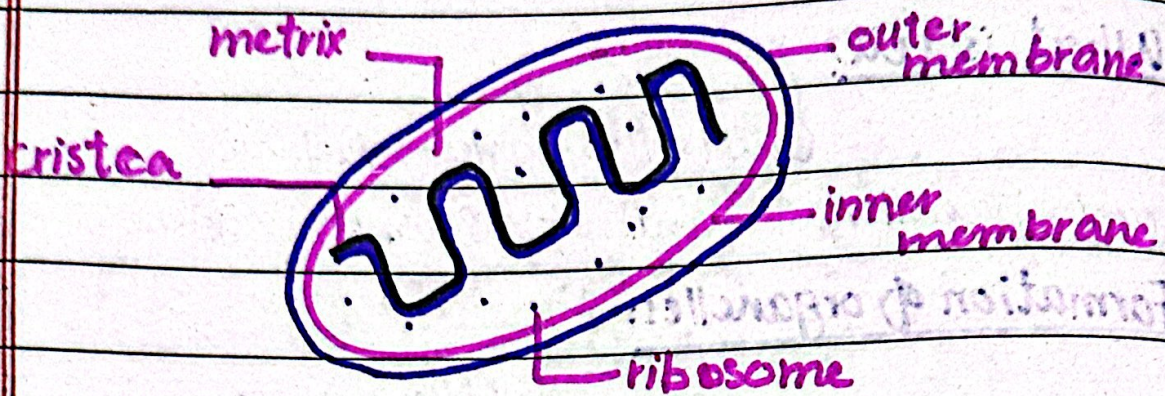
The combined function of cells are sustained by individual function of organelles.

- Each organelle is specified for some specific function.

- For examples vacuole in plants cells is responsible for food formation and mitochondria in animal cells is the energy center of cell.

- A single microscopic unit cannot sustain and perform multiple functions at a times that is why cells form organelles to perform multiple functions at a single time.

Mitochondria



- Mitochondria is also known as power house of cell.
- A mitochondria is responsible for maintaining and regulating all the other functions within a cell.
- A cell contain number of mitochondria in it.
- It maintains all the functions and supports the functioning of cell that is why it is known as power house of cell.
- Energy supply to the organelles and cell is provided by mitochondria.

(c) Merits of volcanic eruption

→ The volcanic eruption is a natural disaster that sometimes also shows up with numerous merits listed below:

- The lava erupted from a volcano, when cool down is used as artifact or also used as for the purpose of scientific research.
- The minerals that erupt as a part of lava increases the fertility of soil in nearby area.
- Volcanic eruption is also a promoting site of tourism.
- People fond of travelling, usually see volcanic eruption as a beautiful sight of nature. This promotes tourism.
- The remains of volcanic eruption sometime contain critical minerals that are bargained at hefty amounts.

Demerits of volcanic eruption

→ The disasters of volcanic eruption have been witnessed world wide and its demerits are listed below:

→ The gases released as a result of volcanic eruption pollutes the air.

→ When the volcanic eruption is sudden and extreme it affects the localities.

→ Mass migration prior to volcanic eruption creates accommodation issues for people.

→ Lava erupted from volcano burns down the trees through the hill.

→ The lava from volcano can ignite wildfires.

→ The intensity of volcanic eruption is sometimes unpredictable and can be extremely dangerous.
