Hudaibia
Batch#80

Day: Date:

Section-II

Q No:6

(a)

A store has packets of candies in Flavours Apple, Berry, Cherry and Date in ratio 3:6:2:5 if Apple candies exceed Date candies by 35, how many Berry candies?

Solution:

Apple, Berry, Cherry and Date = 3:6:2:5

Let x the common multiplier for the ratio

Apple: 3x Berry: 6x Cherry: 2x

Date: 5x

Number of Apple candies exceeed from Date candies is 35, so,

Apple - Date = 35

$3x + 5x = 35$

$\frac{+7x}{+7} = \frac{35}{+7}$

$x = 7$

Berry = $6x = 6 \times 7 = 42$

So Berry candies is 47

(b)

Solution

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original price = $200

Discount = 25% of $200

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

Price after discount

200 - 50 = 150

Tax = 6% of $150

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

Total amount paid = 150 + 9 = 159

Paid amount = $159

(C)

Solution:-

Distance = 36km

speed = 18km/hr

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

Start time = 1:pm

1:00pm + 2hr = 3:00pm

so, the the bicycle reches at 3:00 pm

(D)

i) STSTAICITS

STSTAICITS

= STATISTICS

ii) LGEBMAR

LGEBMAR

= ALGEBRA

QNo:7

(a)

Diameter = 14cm

Radius = $r = \frac{14}{2} = 7cm$

Formula for volume of sphere:

$$V = \frac{4}{3}\pi r^3$$

$$V = \frac{4}{3} \times \frac{22}{7} (7)^3$$

$$V = \frac{4}{3} \times \frac{22}{7} (343)$$

$$V = \frac{4}{3} \times \frac{22 \times 343}{7}$$ (49)

$$V = \frac{4}{3} \times 22 \times 49$$

$\because 22 \times 49 = 1078$

$$V = \frac{4 \times 1078}{3} = \frac{4312}{3}$$

$$V = 1437.03 cm^3$$

(b)

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Total saving = Rs 25,000

Ratio = 1:2:3:4:5

sum of ratio = 1+2+3+4+5 = 15

Value of 1 Part = $\frac{25000}{15}$ = 1666.67

So the smallest share (1 part) = 1666.67 Rs

(c)

i)

2, 6, 18, 54, 162, 486

2×3 = 6

6×3 = 18

18×3 = 54

54×3 = 162

162×3 = 486

So, All numbers are correct and fit in the serise.

ii)

3, 5, 7, 11, 13, ____

3+2 = 5

5+2 = 7

7+4 = 11

11+2 = 13

13+4 = 17

3, 5, 7, 11, 13, 17

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So the missing term is 17

(d)

$a = 5cm \quad b = 12cm \quad c = 13cm$

Using pythagoras theorem

$c^2 = a^2 + b^2$

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

$169 = 25 + 144$

$169 = 169$

right angle triangle is opposite to logest side (13cm)

$C = 90^\circ$

$\sin A = \frac{\text{opposite}}{\text{hypotenuse}} = \frac{5}{13}$

$A = 22.62^\circ$

$B = 90^\circ - A$

$B = 90 - 22.62^\circ$

$B = 67.4^\circ$

$A = 22.62^\circ, \quad B = 67.4^\circ \quad C = 90^\circ$

Section I

Q No: 4

(a)

Chlorophyll

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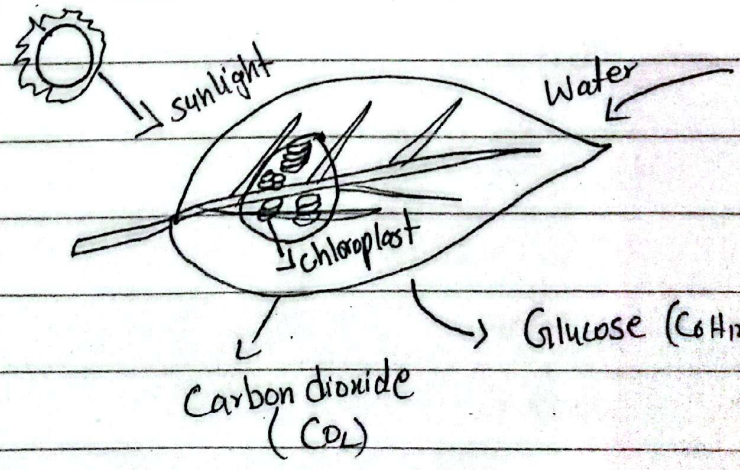
Chlorophyll is a green pigment located in the chloroplast of plants and certain algae. It is essential for photosynthesis, as it captures sunlight and converts it into chemical energy. Chlorophyll absorbs light mainly in the blue and red wavelengths and refelects green, giving plants their characteristics color. There are primarily chlorophyll a and chlorophyll b, which work togather to maximize light absorption. It plays a crucial role in energy transfer during photosynthesis, enabling the synthesis of glucose and release of oxygen. Without chlorophyll, plants could not produce food, making it vital for all life on Earth.



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(b)

Role of ribosomes in Protein synthesis

The ribosome serves as the factory where the genetic code is translated into protein. It is a large, complex molecular machine composed of ribosomal RNA (rRNA) and proteins, exiting in two subunits (Small and large) that assemble on the mRNA tamplate.

The core Function of ribosome is the decoding of mRNA and the catalysis of piptide bond formation, ensuring the sequance of the amino acids in the growing polypiptide chain precisely matches the sequance of codons in the mRNA

The ribosomes bins the mRNA and established the reading frame, ensuring the coclons (triplets of nucletides) are read correctly, like aligning the correct starting point on a tape measure.

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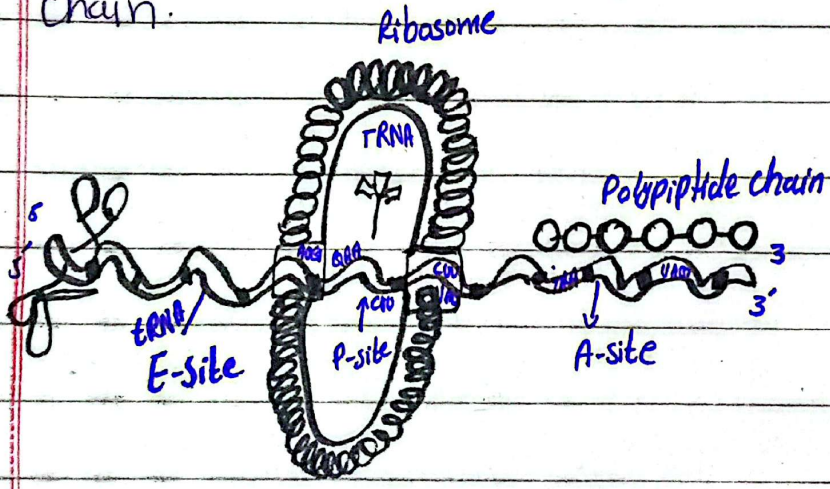
It provide three binding sites (A, P, E) for tRNA. The A site (aminoacyl-tRNA) accepts the incoming charged tRNA matching the codon, the P site (peptidyl-tRNA) holds the tRNA attached to the growing polypiptide, and the E site allows the uncharged tRNA to leave. The large subunit act as an enzyme to form the peptide bond between the amino acids, linking the growing chain.



(C)

Methods of Solid Waste Managment

Solid waste managment (SWM) involves set of activities designed to manage waste from its inception

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to its final disposal. The most effective approach is often guided by the waste managment Hierarchy, which priorties actions from most to least environmental perferred.

Methods

The primary methods used for the treating and disposing of solid waste can be grouped as:

1- Resourse Managment

These methods aim to decrease the volume of waste generated or re-incorporate materials back into the production cycle.

1- Reduction is used to minimize the amount of waste created at the source using less packaging.

2- Reuse items multiple times without significant reprocessing like refilling of Water bottels.

3. Recycling of paper, glass and plastic into new products.

2- Biological treatment Method

These methods use microorganisms

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to decompose organic waste.
A controlled process where organic matter decomposese in the presence of oxygen, resulting in a nutrient-rich soil conditioner called compost.
The decomposition of organic matter in a sealed container in the absence of oxygen, and the vermicomposting.

3- Thermal Treatment Methods

These method involve the use of heat to convert waste into ash, gas, or heat energy, significantly reducing its volume likewise Incineration, pyrolysis and gasification.

4- Disposal Methods

These are generally the least preferred options in the waste hierarchy, used for residual waste that cannot be practically treated by other methods, likewise sanitary landfilling, and controlled dumping.

(d)

1- Biofule

A fule ~~fuel~~ derived

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from biomass (living or dead plants material or animal waste) as opposed to fossil fuel. common examples include ethanol (from corn, sugar cane) and biodiesel from vegitable oils, and animal fats. They are a source of renewable energy.

2- Adulteration

The act of debasing a substance like food, fuel or a chemical by adding inferior, cheaper or improper foreign substances. In the context of fules, it often refers to mixing in lowes quality or harmful materials.

3- Troposphere

The lowest layer of the Earth's atmosphere, extending from the ground up to about 10-20km. It is where humans live and nearly all weather occurs within this layer, as it contains about 99% of the atomosphere's water vapor.

5- Isotopes

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Varients of a particular chemical element that have the same number of protons and thus the same atomic number and chemical properties but a different number of neutrons and thus different atomic masses. For example, Carbon-12 and carbon-14 are isotopes of Carbon.