

Section-II

Q_{NO}-8Part - a

Given:-

Sum of three consecutive odd numbers is = 273

To find:-

three odd numbers = ?

Solution:-

Let 1st odd number is = n 2nd odd number is = $n+2$ 3rd odd number is = $n+4$

According to given condition

$$n + (n+2) + (n+4) = 273$$

$$3n + 6 = 273$$

$$3n = 273 - 6$$

$$3n = 267$$

$$n = \frac{267}{3} = 89$$

$$n = 89$$

2nd odd no. is = $n+2 = 89+2 = 91$ 3rd odd no. is = $n+4 = 89+4 = 93$

89, 91, 93 are three consecutive odd numbers.

Part - b Q8

Given:-

i) 4, 16, 36, 64, ?, 144

To find:- missing number in series
Sol:-

4, 16, 36, 64, ?, 144

let missing number is x

4, 16, 36, 64, x , 144

$2^2 = 4$

$4^2 = 4 \times 4 = 16$

$6^2 = 6 \times 6 = 36$

$8^2 = 8 \times 8 = 64$

$10^2 = 10 \times 10 = 100$

$12^2 = 12 \times 12 = 144$

hence, missing no. is 100

4, 16, 36, 64, 100, 144 ans

ii) 30, 29, 27, ?, 20, 15

Sol. let x be the missing number

30, 29, 27, x , 20, 15

30

$30 - 1 = 29$ hence, $x = 24$

$29 - 2 = 27$ so,

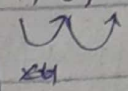
$27 - 3 = 24$ 30, 29, 27, 24, 20, 15

$24 - 4 = 20$

$20 - 5 = 15$

Rough work

4, 16, 36, 64, x , 144



$2^2 = 4$

$4^2 = 16$

$6^2 = 36$

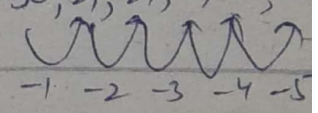
$8^2 = 64$

$10^2 = 100$

$12^2 = 144$

R.W

30, 29, 27, x , 20, 15



Part (c) correct word from jumbled spelling

i) THRSI

THIRST

ii) GNDREA

GARDEN

iii) SCHAMOT

STOMACH

iv) ONLNDO

LONDON

v) HIODALY

HOLIDAY

Part (d)

Given :-

Let Sara's age is $= x$

Sara's mother age $= 6x$

Let Ali's age is $= y$

According to given condition $y = 2x$

In 3 years,

Sara's age will $= x + 3$

Sara's mother age $= 6x + 3$

brother's age $= 2x + 3$

According to condition

$$(x+3) + (6x+3) + (2x+3) = 72$$

$$9x + 9 = 72$$

$$9x = 72 - 9$$

$$x = 63/9$$

$$x = 7$$

So,

Sara's age is $= 7$

Sara's mother's age is $= 6x = 6 \times 7 = 42$

Sara's brother's age is $= 2x = 2 \times 7 = 14$

Ans.

iii

1, 7, 15, 25, ?, 51

Sol:-

1

1 + 6 = 7

7 + 8 = 15

15 + 10 = 25

25 + 12 = 37

37 + 14 = 51

hence,

missing no. is **37**

RW

1, 7, 15, 25, ?, 51

1 + 6 = 7

7 + 8 = 15

15 + 10 = 25

25 + 12 = 37

37 + 14 = 51

so, 1, 7, 15, 25, 37, 51

iv,

0, 2, 6, 12, 20, 30, x

Sol:-

0

hence,

0 + 2 = 2

2 + 4 = 6

6 + 6 = 12

~~8 + 10 =~~
12 + 8 = 20

20 + 10 = 30

30 + 12 = 42

x = 42.

R.W

0, 2, 6, 12, 20, 30, x

0 + 2 = 2

2 + 4 = 6

6 + 6 = 12

12 + 8 = 20

20 + 10 = 30

30 + 12 = 42

0, 2, 6, 12, 20, 30, 42 ans.

v,

48, 24, 72, 35, 108, x

48 / 24 = 2

so,

2 x 24 = 72

72 / 3 = 36

36 x 3 = 108

108 / 2 = 54

48, 24, 72, 35, 108, 54

ans

RW

48, 24, 72, 35, 108, x

48 / 24 = 2

72 = 3 x 24

72 / 3 = 36

36 x 3 = 108

108 / 2 = 54

Q6

Part - a

Given:-

1st candidate got votes = 15,000

2nd candidate got votes = 10,000

3rd candidate got votes = 8000

To find:-

Percentage of total ^{votes of} winning candidate = ?

Solution:-

$$\begin{aligned} \text{Total number of votes received} &= \\ &= 15,000 + 10,000 + 8000 \\ &= 33000 \text{ votes} \end{aligned}$$

$$\begin{aligned} \text{percentage of winning candidate} \\ \text{votes} &= \frac{15000}{33000} \times 100 \end{aligned}$$

RW

$$\begin{array}{r} 45.4 \\ 11 \overline{) 500} \\ \underline{44} \\ 60 \\ \underline{55} \\ 50 \\ \underline{44} \\ 6 \end{array}$$

$$= \frac{1500 \cancel{0}^5 \cancel{0}^0}{33 \cancel{0} \cancel{0}} = \frac{500}{11}$$

$$\boxed{\% \text{ of total votes} = 45.4\%} \quad \text{ans}$$

Part - b

Given:- Ratio of angles = 3 : 4 : 5

To find:- \angle Angle = ?

Sol:-

As, sum of total angle of triangle is = 180

Angles are $3x, 4x, 5x$

$$\begin{aligned} \text{hence, } 3x + 4x + 5x &= 180 \\ 12x &= 180 \end{aligned}$$

$$\begin{aligned} x &= \frac{180}{12} = 15 \\ x &= 30^\circ \end{aligned}$$

~~6.6~~

$$x = 30^\circ$$

hence, angles are $3x, 4x, 5x$
 $3(30), 4(30), 5(30)$

angles are $90^\circ, 120^\circ, 150^\circ$ ans.

Part-d Given:-

Present age of

$$A : B = 6 : 7$$

In 5 years, $\frac{A}{B} = \frac{6x}{7x}$

$$\frac{A}{B} = \frac{6x+5}{7x+5}$$

$$\frac{6x+5}{7x+5} = \frac{6}{7}$$

$$48x + 40 = 49x + 35$$

$$49x - 48x = 40 - 35$$

$$\boxed{x = 5}$$

So, A's age = $6x = 6(5) = 30$

B's age = $7x = 7(5) = 35$

$$\boxed{A's \text{ age} = 30 \quad B's \text{ age} = 35}$$

Part-c

Given:- Group consists of

Boys = 4, Girls = 6.

Boys req. = x , Girls available = 102

Sol.

$$\frac{4}{6} = \frac{x}{102}$$

$$4 \times 102 = 6x$$

6

\therefore 68 boys are required

$$x = \frac{4 \times 102}{6}$$

$$x = 2 \times 34$$

$$\boxed{x = 68}$$

Section - I.

Q. NO. 4

Part - a

Methods employed in SWM

Ans:-

Solid Waste Management

is a process of supervised handling of solid waste from point of its generation through recovery process to the point of disposal.

Methods of SWM

There are various methods of solid waste management. These are as follows

- ① Open dumping
- ② Landfilling
- ③ Incineration
- ④ Composting
- ⑤ 3R Approach
Reduce, Reuse and Recycle

Open dumping:-

It is widely used process in large cities, where waste is disposed off in outskirts. A large/big hole is dug in the earth and masses of solid waste dumped in it.

Dumping sites: Dumping sites must be far away from the cities, residential areas and water bodies. Barren land must be used for this purpose. But it is not

considered to be the efficient way of disposing solid waste.

②

Incineration.

It is a waste management process in which waste is burned at high temperatures to convert into ash, gases and heat energy. It is used to manage a variety of waste streams, including municipal solid waste.

Modern incinerators use pollution control technologies, such as scrubbers and filters, to minimize the emission of air pollutants and greenhouse gases.

It can be a useful tool for managing certain types of waste, but it should be used in conjunction with other waste management methods, such as recycling and composting to minimize the environmental impact.

③ Landfilling:

It is a process of excavating and processing waste material from a landfill to recover resources and reduce the volume of waste in the landfill. This can involve removing the waste, sorting it, and extracting recyclables and

other valuable materials such as metals and glass. The remaining waste can be compacted and covered, reducing the amount of space needed for disposal.

It also helps to recover valuable materials that might otherwise be lost, such as metals and plastics.

Landfilling can be a sustainable approach to solid waste management.

However, it should be approached with caution and with proper consideration of the potential risks and costs involved.

4) Composting:

It is a natural process that converts organic wastes, such as yard trimmings and food scraps, into a nutrient-rich soil amendment known as compost.

It can be done on a small scale in a backyard compost bin or on a ~~small~~ large scale at community composting facility. This process involves mixing of organic waste with other carbon rich materials, such as leaves and saw dust, to

provide the necessary carbon-to-nitrogen ratio for the microbes that break down the organic matter. Moisture, air, and proper mixing are also important for successful composting. According to a World Bank report over 50 percent of an average developing country city's municipal solid waste stream could be effectively composted.

It's a sustainable practice that can be integrated into various aspects of daily life, including gardening, agriculture, and even municipal solid waste management.

3R:-

most preferred

Reduce minimizing generation of waste in the first place by repairing and reconditioning whole/part of products

Reuse again utilizing products with the same / different purpose with redistribution/reuse

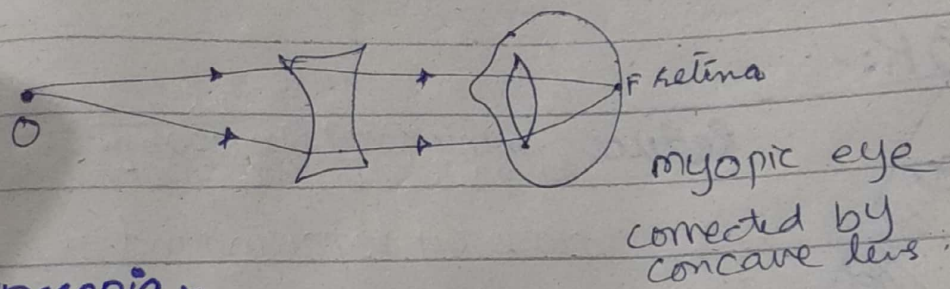
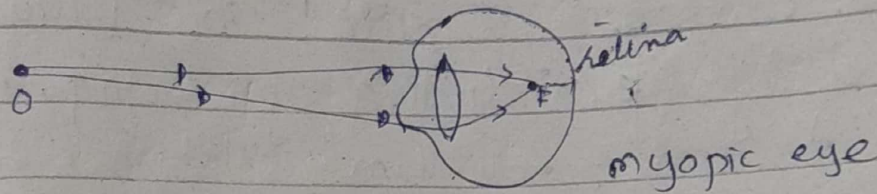
Recycle disintegrating products and using its components as inputs for new process/items

least preferred

Part c

Myopia. It is an eye disease where a person is able to see near objects clearly and it is difficult for him to see objects. It usually occurs when image is formed ~~be~~ in front of retina, instead of on retina.

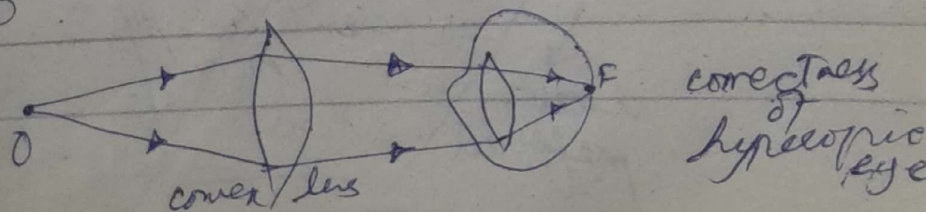
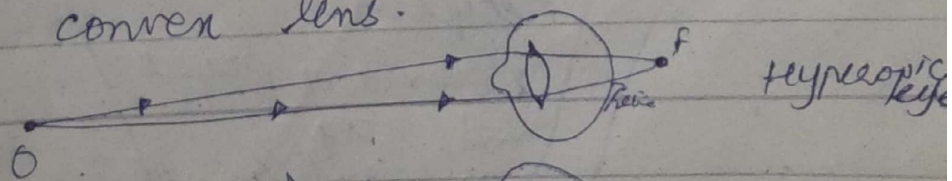
It is corrected by using concave lens.

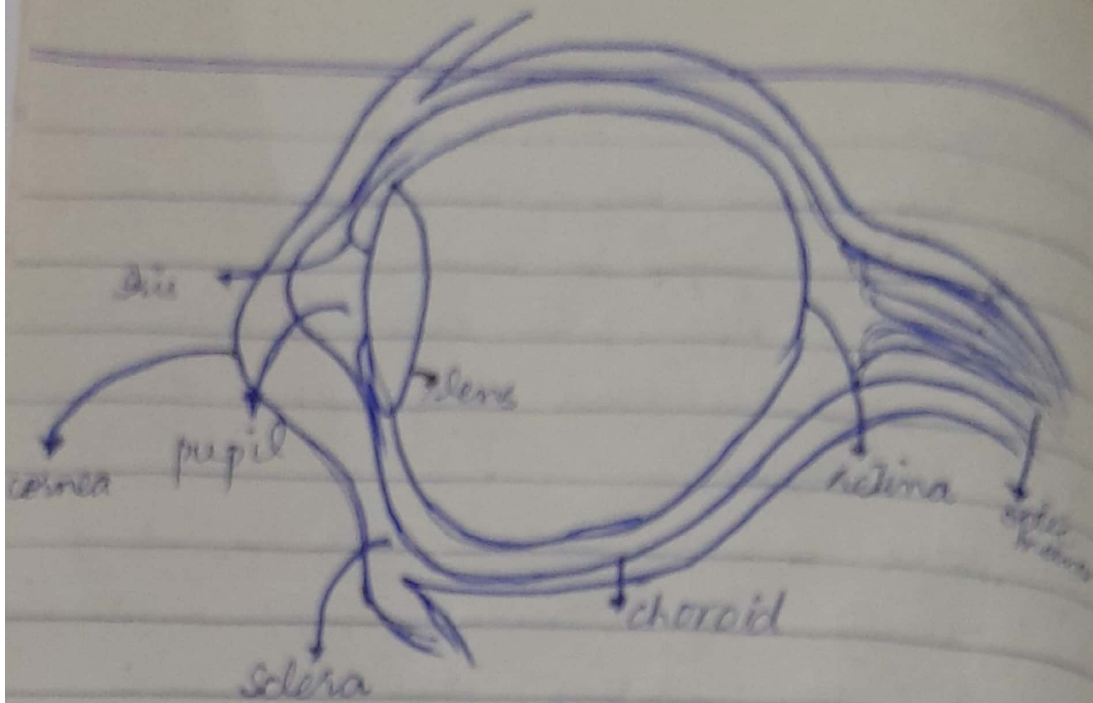


Hypertopia

It is an eye disease where a person is unable to see ~~far~~ near objects clearly. It is because image formed behind the retina.

It can be corrected by using convex lens.





Parts of Eye

Enlist major parts of eye

- | | |
|----------|----------------|
| ① Lens | ⑤ Iris |
| ② Retina | ⑥ Cornea |
| ③ Sclera | ⑦ Choroid |
| ④ Pupil | ⑧ Optic nerves |

Part d Uses of Microwave

microwaves are used

- ① to cook food
- ② transmit information
- ③ In radar, helps to predict weather
- ④ Used in communication because they can penetrate clouds, smoke and light rain

(ii) X-rays-

They are used for getting x-ray of pictures of bones of body. Used as diagnostic tools in medicine and as treatment for various forms of cancer.

(iii) UV rays-

① UV-rays are used for detecting the purity of gems, eggs & herbs etc.

② Used to detect forged bank notes: they fluoresce in UV light, real bank notes don't.

③ Used to identify items outside visible spectrum areas, known as black lighting.

Fig 6

Human heart working in blood circulation

