Section - II

Q NO6

(a) Data:

Three candidate contested and recieved votes 15000, 10000, 8000 respectively.

Let us consider;

A = 15,000

B = 10,000

C = 8,000

Find the percentage of winning candidate?

Solution:

Total votes = A + B + C

Total votes = 15,000 + 10,000 + 8,000

Total votes = 33,000

For finding the winning percentage;

A is winning candidate as he recieved more votes.

$$A = \frac{\text{recieved votes}}{\text{Total votes}} \times 100\%$$

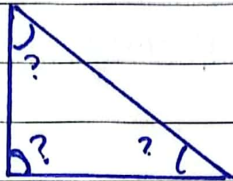$$A = \frac{15000}{33000} \times 100\%$$

$$A = \frac{15}{33} \times 100\%$$

A = 45.45%   Ans

Good for math work
Insufficient length of theory portion
Add more headings
Increase length

Q NO6 (b)

Data

Ratio of triangle's angles = 3:4:5
find each angle.

Solution

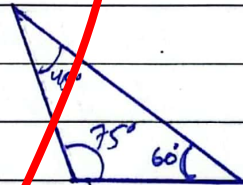We have triangle and the total sum of angles of triangle is 180°.

Let us consider the one part of triangle is x.

$$\therefore \quad 3x + 4x + 5x = 180$$

$$12x = 180$$

$$x = \frac{180}{12}$$

$$\boxed{x = 15}$$

Now find each angle.

1st angle = $3x$ = 3×15 = 45°

$$\boxed{\text{1st angle} = 45°}$$

2nd angle = $4x$ = 4×15 = 60°

$$\boxed{\text{2nd angle} = 60°}$$

3rd angle = $5x$ = 5×15 = 75°

$$\boxed{\text{3rd angle} = 75°}$$

So, the angles of triangle are 45°, 60°, and 75°.

QNo6 (i)

Data:

One group consist of 4 boys and 6 girls.
How many boys required? if 102 girls available for such grouping.

Solution:

First we find how many groups can formed if 102 girls available as 6 girls are required in one group.

Total no: of groups = $\frac{102}{6}$ = 17

| Total no: of groups = 17 |

Now we find total no: of boys required.

No: of boys required = No: of boys in 1 group $\times$ Total groups
No: of boys required = 4×17

| No: of boys required = 68 |

| So, 68 boys are required, if 102 girls are available |

Ans

Ⓝ N06 (d)

Data:

Ratio of present ages of A & B is 6:7
After 5 years, ratio become 7:8
find present ages of A & B

Solution.

First find 1 unit age as the difference
in both ratio is 1.

$$+1 \begin{matrix} 6 : 7 \\ 7 : 8 \end{matrix} +1$$

In given statement, age is asked after 5 years
So, the age of one unit is 5.

For finding present age's of A & B.

present age of A = 6 × 5

| present age of A = 30 years |

present age of B = 7 × 5

| present age of B = 35 years |

Hence, present age of A is 30 years and B is
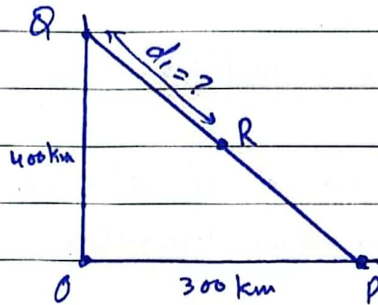35 years.

Ans

Q.NO7 (a)

Data:

P = 300 km eastward of O

Q = 400 km is 400 km North of O.

R = is in the middle of Q & P.

Find distance between Q & R. Let consider dr =?

Solution:

By using Pathagorous theorem.
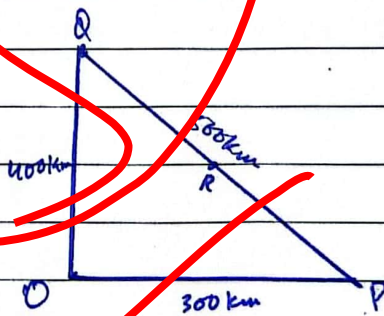
$$H^2 = P^2 + B^2$$

$$H^2 = (400)^2 + (300)^2$$

$$H^2 = \sqrt{160000 + 90000}$$

$$\sqrt{H^2} = \sqrt{250000}$$

$$\boxed{H = 500 \text{ km}}$$

R is in the middle of P & Q and the distance between P and Q is 500. Then, divide 500 by 2.

$$DOR = \frac{500}{2} = 250$$

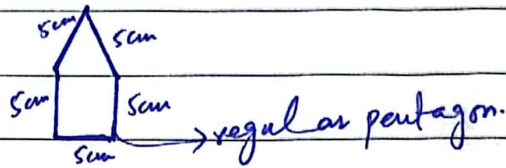$$\boxed{\text{Distance of R from P and Q} = 250 \text{ km}}$$ Ans.

Q NO 7(b)

Data:

Each side of 5cm.
find perimeter of Pentagon =?

Solution:

⟶ regular pentagon.

Perimeter is the sum of all sides. So,

P = 5cm + 5cm + 5cm + 5cm + 5cm

P = 25cm

Q NO7(d)

Data:

Average of 3 boys is 15 years.

Ratio $= 3:5:7$

find the age of youngest boy?

Solution.

formula of Average

$$\frac{a+b+c+\cdots}{n} = \text{total average.}$$

In given statement:

$$\frac{3x+5x+7x}{3} = 15$$

$$3x+5x+7x = 15 \times 3$$

$$15x = 45$$

$$x = \frac{45}{15}$$

$$\boxed{x = 3}$$

For, finding the age of youngest boy. find the age of all.

$$a = 3x = 3 \times 3 = 9 \text{ years.}$$
$$b = 5x = 5 \times 3 = 15 \text{ years}$$
$$c = 7x = 7 \times 3 = 21 \text{ years.}$$

Therefore, a is the youngest boy and his age is 9 years old.

Section - I

Q.NO2 (a)

<u>Volcanoes</u>: It is simply an opening or vent on earth's surface through which molten magma, escape on the earth's surface.

<u>How Volcanoes are erupted?</u>

It can be formed in three ways.

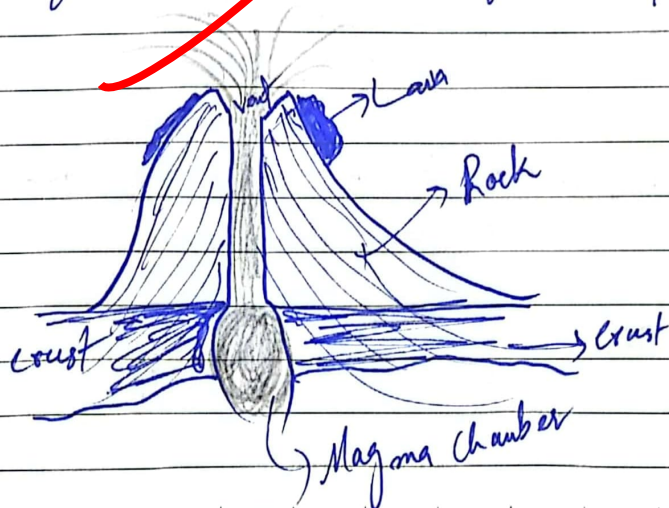① Via Subduction:
               The subducting slab dehydrates to form new melt that will rise through the crust to be erupted at the surface.

② Via Rifting:
              When two plates pull apart magma rises, producing volcanic eruptions at the surface.

③ Hotspot:
              It is not occur along a plate boundary. It can be form in the middle of tectonic plates.

Section - I

Q.NO2(b)

Big Bang:

It is the theory that describes that how the universe expanded from an initial state. It is the idea that universe began as just a single points then expanded and stretched to grow as large as it is now.

Big Crunch:

It is the theory that describes the scenerio that the expansion of the universe eventually reverses and the universe recollapses.

Big Bang Theory   Big Crunch Theory.
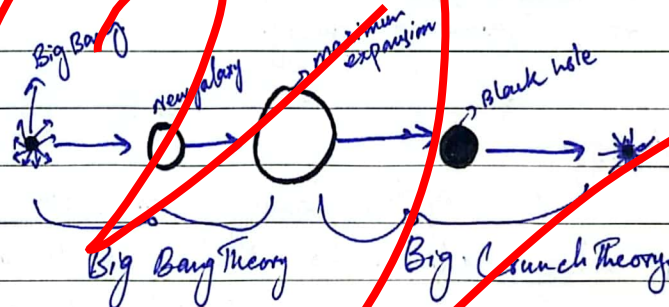
How age of Universe is determined?

The age of universe estimate by the Astronomers by two ways:

① By looking for the oldest stars.

② By measuring the rate of expansion of the universe and extrapolating back to the Big Bang.

Ꝺ NO2 (C)

Sources Of Renewable energy:

① Wind power:

It is necessary to move turbines for producing. So, Airflows can be used to run the turbines. It is most common for commercial use.

② Hydropower:

Energy in water can be harnessed and used. Water is about 800 times denser than air, even a slow flowing steam of water can run the turbines for producing energy.

③ Solar Energy:

It applies energy from sun in the form of solar radiation for heat or to generate electricity. It is most common in the houses for electricity generation.

④ Geothermal Energy:

Hot water and steam from deep underground can be used to drive turbines.

⑤ Biofuels:

It is derived from living material and a class of renewable energy. The most common biofuels are ethanol, biodiesel, and biogas.

Q No2 (d)

Optical Fiber:

These are the stands of glass which are used to transmit light signal from one point to another point in telecommunication.


Cladding, Jacket, Core, Buffer
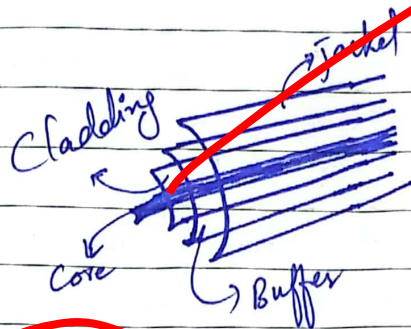
How does Optical fibers works?

The working principle of optical fibers is total internal reflection and the data transmits in the form of light energy.

Sender → Total internal reflection. → Reciever
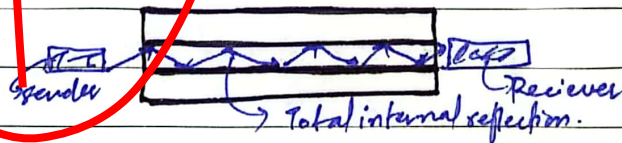
The input data is in the form of electrical signals, is given to the transmitter circuitry, it converts them into light signals with the help of a light source. The light from the source is caused by fibers optic cable to the destination circuitry where in the information is transmitted back to the electrical signal by a reciever circuit

1010/010 → Transmitter circuitory → Light source → Detector → Reciever circuitory → 1010/010
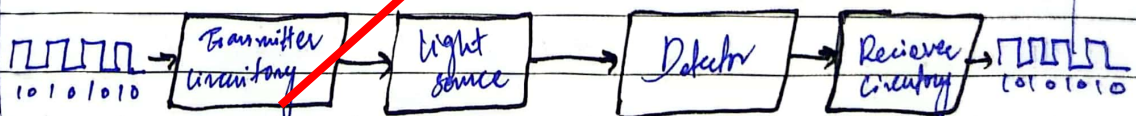
Q.No4 (a)

Solid Waste Management:

It is the complete process of collecting, treating and disposing of solid waste.

Methods of Solid Waste Management.

(1) Dumping into Sea.

Solid waste shall be taken in barges sufficiently far away from the coast almost 15 – 30 km and dumped them. It is only possible in coastal areas but it is not environment friendly.

(2) Sanitary land filling:

A deep tranch is excavated and solid waste laid into layers. Layers are compacted with some mechanical equipment and covered with earthy leveled and compacted.

(3) Use of energy Combustion:

Solid wast was burned without recovering energy. It is exceeds the acceptable temperature for electrostatic perticipation used for particular emission control.

(4) Composing:

It is similar to sanitary land filling

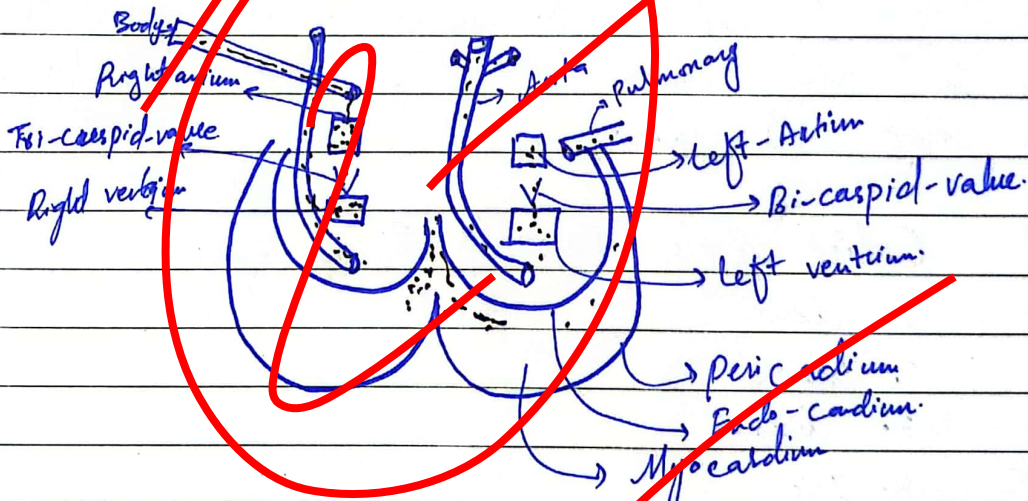and popular in developing States. Its product are good for fertilizer.

(5) Fermentation:

Waste convert into compost and recyle is possible in fermentation. It convert into compost then the method of composting used. It is mostly used in ~~big~~ biological digestion waste.

Q NO 4(6)

Human Heart:

It is an organ that pumps blood throughout your body. It is human circulatory main organ.

How does Human Heart work in blood circulation?

Body↓
Right atrium
Tri-cuspid-valve
Right ventricle

Aorta Pulmonary
→ Left Atrium
→ Bi-cuspid-value.
→ Left ventricle
→ Peri-cardium
→ Endo-cardium.
→ Myocardium

First, human hearts collect the deoxygenated blood through Veins. Then, store the deoxygenated blood in Vena-Cava. After this blood out and goes down forward chamber and valves prevent the ~~blood outflow~~ is bad. flow of blood through ~~Right~~ atrium Then blood

goes through pulmonatory artery and carry deoxygenated blood toward the lungs. Then, lungs will do oxygenation of blood. After this, blood goes through pulmonary veins towards left artium and left artium send it toward left orentrical by bicuspid value. After this, Left vertical send blood towards head, neck, arm, shoulder and lower body by Aorta.

Q NO 4(C)

Myopia:
It is the disease of eye in which near object is clear but objects farther away look blurry.

Hyperopia:
It is the disease of eye as well and in which near object is blur but far object is clear.

Enlist Main Parts of Human eye:
1. Sclera
2. Choroid
3. Charnea
4. Iris
5. Pupil
6. Lens
7. Ratina
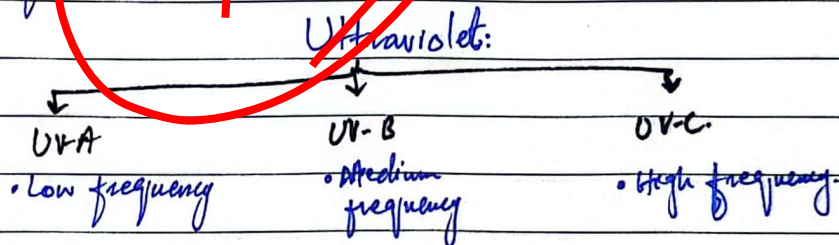8. Optic Newe
9. Aqeous & Virtous Humor.

Q.No 4 (d)

(i) **Micro wave:**

It is shorter than radio waves with wavelengths measured in cm. It is used to cook food, transmit information and in radar. It is useful in information because they can penetrate clouds, smoke and light rain.

(ii) **Ultraviolet:**

It has wavelengths of 10-310nm. It has the next shortest wavelength after visible light. It is used in to find ~~actually~~ in adulteration in liquid.

Ultraviolet:

UV-A	UV-B	UV-C
• Low frequency	• Medium frequency	• High frequency

(iii) **X-Rays:**

It has wavelengths of 0.01-10nm. They are generated by superheated gas from exploding stars and quasars. It has shorter wavelength than UV rays. It is used to ~~damage~~ take pictures of bones of body.