

## Section - B

### Q no 6 (a)

The value of a washing machine depreciates at the rate of 10 percent every year. If its present value is Rs. 8748 then what was the price of washing machine three year ago.

Given:

- Present value of washing machine = 8748 rs
- Depreciation of 10 percent each year.

Find:

The value of machine 3 year ago.

Solution:

First find 10 percent of 8748:

$$\Rightarrow 10\% \text{ of } 8748$$

$$\Rightarrow \frac{10}{100} \cdot 8748$$

$$\Rightarrow \boxed{874.8}$$

Adding 874.8 with 8748:

$$8748$$

$$874.8$$

$$\boxed{9622.8}$$

1 year ago the value was 9622.8

Now find 10 percent of 9622.8

which was the value before a year.

$$\Rightarrow 10\% \text{ of } 9622.8$$

$$\Rightarrow \frac{10 \cdot 1}{100} \cdot 9622.8$$

$$\Rightarrow 962.28$$

$\Rightarrow$  Add it with original price 9622.8

$$9622.8$$

$$962.28$$

$$\boxed{10585.08}$$

Value of machine 2 year ago = 10585

Now to find the value for 3rd year.

$$\Rightarrow 10\% \text{ of } 10585$$

$$\Rightarrow \frac{10 \cdot 1}{100} \cdot 10585$$

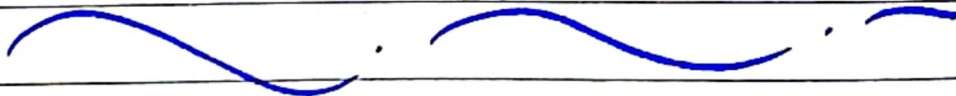
$$\Rightarrow \boxed{1058.5}$$

$$1058.5$$

$$10585$$

$$\boxed{11643.5}$$

So three year ago the value of washing machine was 11643.5



## Q no 6 (b)

A father is four times the age of his daughter. If after 5 years, he would be three times of daughter's age, then further after 5 years; how many times he would be of his daughter age?

Given:

Present age of daughter =  $x$

Present age of father =  $4x$

Change:

After 5 years, age of daughter =  $x+5$

age of father =  $4x+5$

Condition applied =

after 5 years the father age would be

3 times of daughter age:

$$4x+5 = 3(x+5)$$

$$4x+5 = 3x+15$$

$$4x-3x = 15-5$$

$$\boxed{x = 10}$$

So the present age of daughter =  $x = \boxed{10}$

present age of father =  $4x = 4 \times 10 = \boxed{40}$

After 5 years:

Age of daughter =  $x+5 = 10+5 = \boxed{15}$

Age of father =  $4x+5 = 40+5 = \boxed{45}$



After further 5 years:

$$\text{Age of daughter} = 15 + 5 = \boxed{20}$$

$$\text{Age of father} = 45 + 5 = \boxed{50}$$

As 20 is  $\boxed{2.5}$  times of 50.

So the age of father would be  $\boxed{2.5}$  time of her daughter age.

Q NO 6 (c)

What will be the volume of a football with diameter 12 cm?

Given:

$$\text{Diameter} = D = 12 \text{ cm}$$

To find:

$$\text{volume of football} = V = ?$$

Solution:

As we know that

$$\text{volume of spherical body} = V = \frac{4}{3} \pi r^3$$

and we also know that

$$2r = D \quad \text{or} \quad r = D/2$$

$$r = \frac{12}{2}$$

$$r = \boxed{6 \text{ cm}} \quad \text{and} \quad r^3 = \boxed{216}$$

put the value in formula

$$V = \frac{4}{3} (3.14) (216)^{\frac{7}{3}}$$

$$V = 288 \times 3.14$$

$$V = 904.32 \text{ cm}^3 \text{ The volume of football.}$$



### Q no 7 (a)

Average of 7 consecutive numbers is 20. Find the largest of these numbers.

Given:

Average of 7 consecutive nos = 20

To find:

largest no. of the series = ?

Solution:

As we that

$$\text{Average} = \frac{\text{Sum of the events}}{\text{No. of the events.}}$$

$$20 = \frac{\text{Sum of the events}}{7}$$

$$20 \times 7 = \text{Sum of the events}$$

$$140 = \text{Sum of the events (7 consecutive no.)} \rightarrow \text{eq (1)}$$

Let the 1st no. is  $x$ ,  
then sum of 7 consecutive numbers  
will:

$$x + x+1 + x+2 + x+3 + x+4 + x+5 + x+6$$

$$7x + 21$$

Put in eq (1) we get:

$$140 = 7x + 21$$

$$140 - 21 = 7x$$

$$119 = 7x$$

$$x = \frac{119}{7}$$

$$x = 17$$

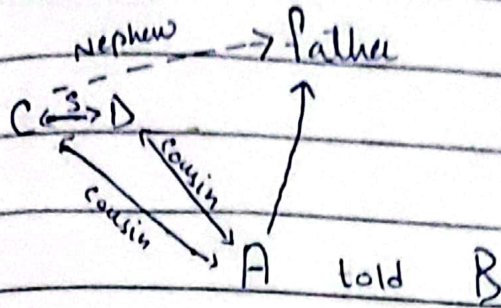
So the 1st number is  $x = 17$ , then the largest number is  
 $x + 6 = 17 + 6 = 23$

Q no 7 (b)

A told B that C is his father's nephew. D is A's cousin but the brother of C. What relation is there b/w D and C.



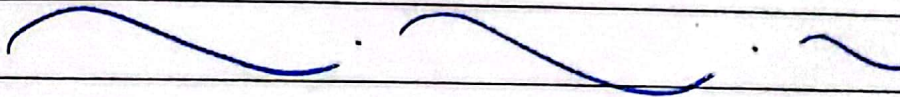
Solution:



As C is the nephew of the father of A, then he becomes the cousin of A.

and D is the cousin of A, but not the brother of C, which means D is the sister of C.

So D and C are siblings, where D is the sister of C.



Part - II  
Section - A

Q NO 2 (a)

Difference between Igneous and Metamorphic:

Meaning of the word:

- The word igneous comes from the word 'ignis' means fire.

where the word metamorphic comes from Greek words and that is "meta means change" and "morph means form".

Definition:

Igneous rocks are formed from solidification of magma in earth crust or lava at the surface.

where as metamorphic rocks are formed from already existing igneous and sedimentary rocks that are subjected to great heat and pressure due to which they change, shape, form and features.



### Origin:

Igneous rocks are formed from magma (molten rock) beneath the earth surface, or from the lava resulted from volcanic activity on the surface of earth.

where as metamorphic rocks are formed by the process called metamorphism that when rocks are buried beneath earth and subjected to high pressure and heat.

### Mineral Compositions:

The igneous rock contain silicon, quartz, alkali pyroxenes, and alivines etc.

while in metamorphic rocks the minerals are called index minerals, include sillimanite, kyanite, staurolite etc.

### Classification:

Metamorphic rocks are classified into:

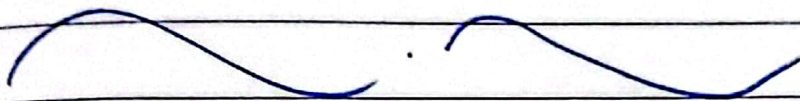
• Contact metamorphic  
eg marble, quartz rock

• Pressure metamorphic  
eg jade

### Igneous rock

Extensive/Volcanic  
eg Andesite

Intrusive/Plutonic  
eg Granite



### Q no 2 (b)

### Smog:

It is a type of air pollution that reduce the visibility.

It is unhealthy to humans and animals. It cause ugly environment that will make you cough and burn eyes.

### History:

The term "smog" was first used in early 1900s to describe of mixture of smoke and fog. The smoke usually

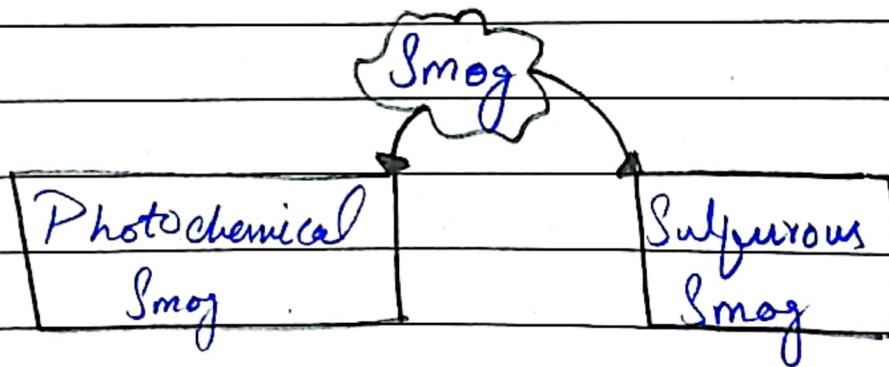


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burning coals and it is mixed with fog. The term was coined as smog. It is very common in industrial areas.

### Composition:

It is majorly made up of ozone. When certain pollutants enter the air like nitrogen oxides, they react with sunlight and turn into ozone.

### Types of Smog:



### Photochemical Smog:

It occurs in hot and dry climates and contains volatile organic compounds. When the hydrocarbon exhaust from vehicles is hit by sunlight

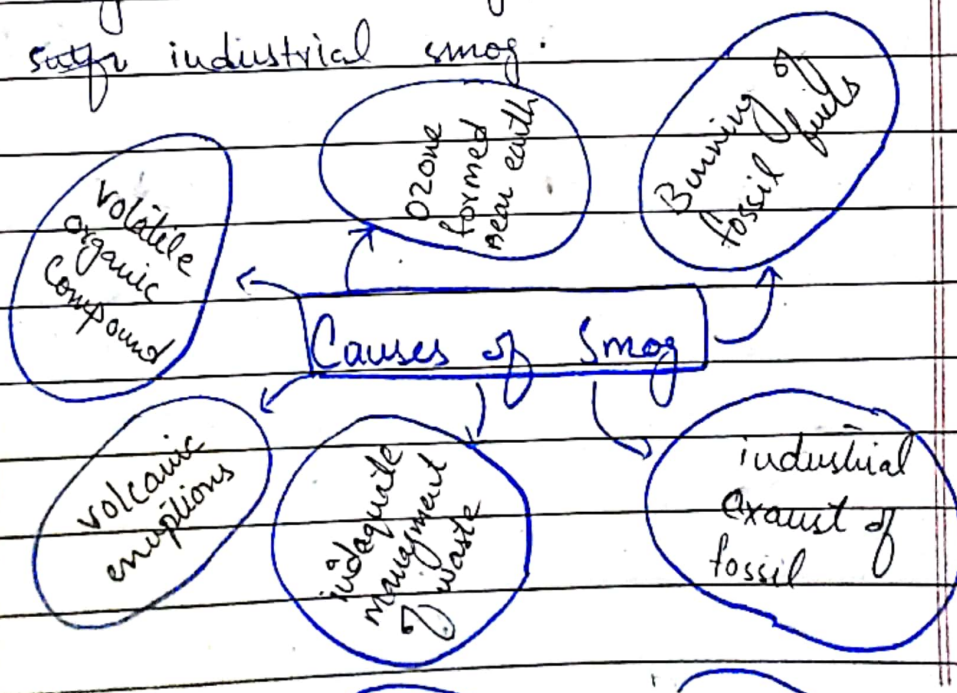


it produce ozone. Ozone is beneficial, when it is form up in the atmosphere, but it is harmful if it is formed near the earth.

### Sulphurous Smog:

It is also known as black smog or industrial smog. It is caused by burning of sulphur bearing fossil fuels like coal.

It mostly occurs in cool and humid environment. Most industries burn coal that produce this smog that is why, it is called sulphur industrial smog.



## Q NO 2 (c)

### Risk Assessment:

Risk assessment is an important part of disaster management because it helps to identify and evaluate potential hazards and their impact. This information helps to create plans to reduce the effect of disasters such as loss of life, property etc.

### Importance of Assessment:

#### Helps to create plans:

Risk assessment helps to create identify the most common hazards and vulnerabilities that helps in creating plans to avoid or minimize the impact cause by the disasters.

#### Reduce The impact:

By creating

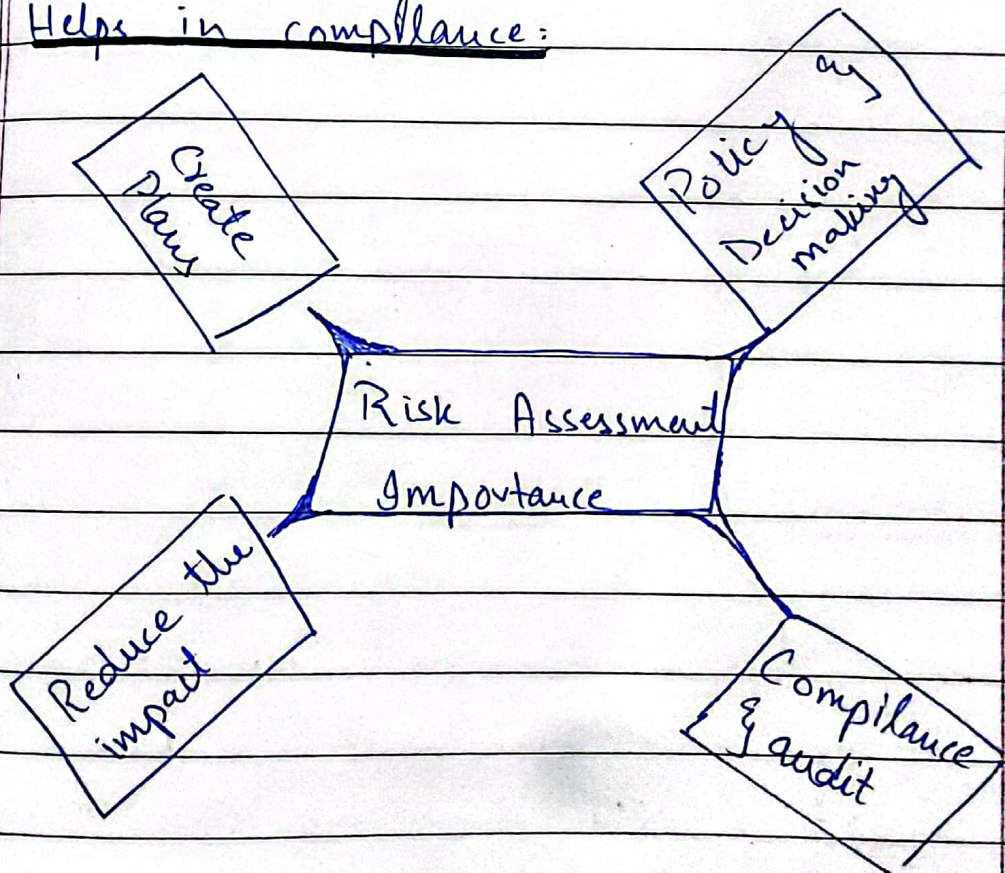


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proper plans we can successfully reduce or sometime avoid the impact of disaster to save life, property and other damage.

Helps in policy and Decision-making:

Risk assessments can provide information that is used to formulate policies and helps in decision-making to reduce disaster damage.

Helps in compliance:





## Help in Compliance:

It can help to create a repository of hazards and helps to demonstrate compliance with safety regulations.

## Q No 2 (d)

### Short sightedness:

It is also called as Myopia. It is a condition in which the person is unable to see the far object clearly, while there is no problem in seeing the near objects.

### Reason: of Myopia:

In a healthy vision the image is formed on the retina of the eye, while in short sightedness the image is formed in front of retina.

## Vission:

As a result of short-sightedness, the person see blurred images of the object that are far away from the person.

## Long Sightedness:

It is also called as Hypermetropia.

It is a condition in which the person see is unable to see the near objects, while there is no problem in observing the far objects.

## Reason of Hypermetropia:

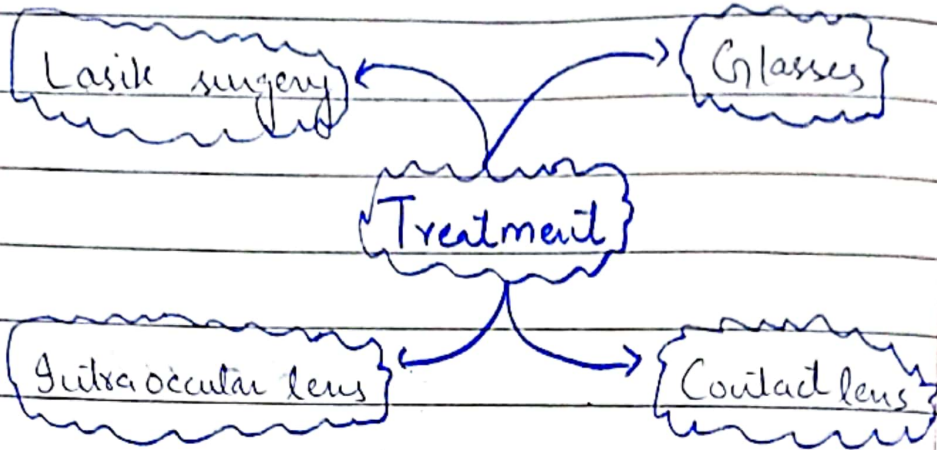
In long sightedness or hypermetropia the image of object near to us are formed beyond the retina, therefore people need reading glass.

## Vission of people suffering

from ~~met~~ hypermetropia:

In this

cause a blurred image of the near object is formed.



Q NO 4 (a)

## Solar System:

Origin: Cygnus arm of milky way.

Age: Approximately 4.6 billion year.

Components: Sun, Planets, Solar bodies  
Satellites.

Planets: Mercury, Venus, earth,  
Mars, Jupiter, Saturn,  
Uranus, Neptune.

Solar bodies: Comets and asteroids etc.



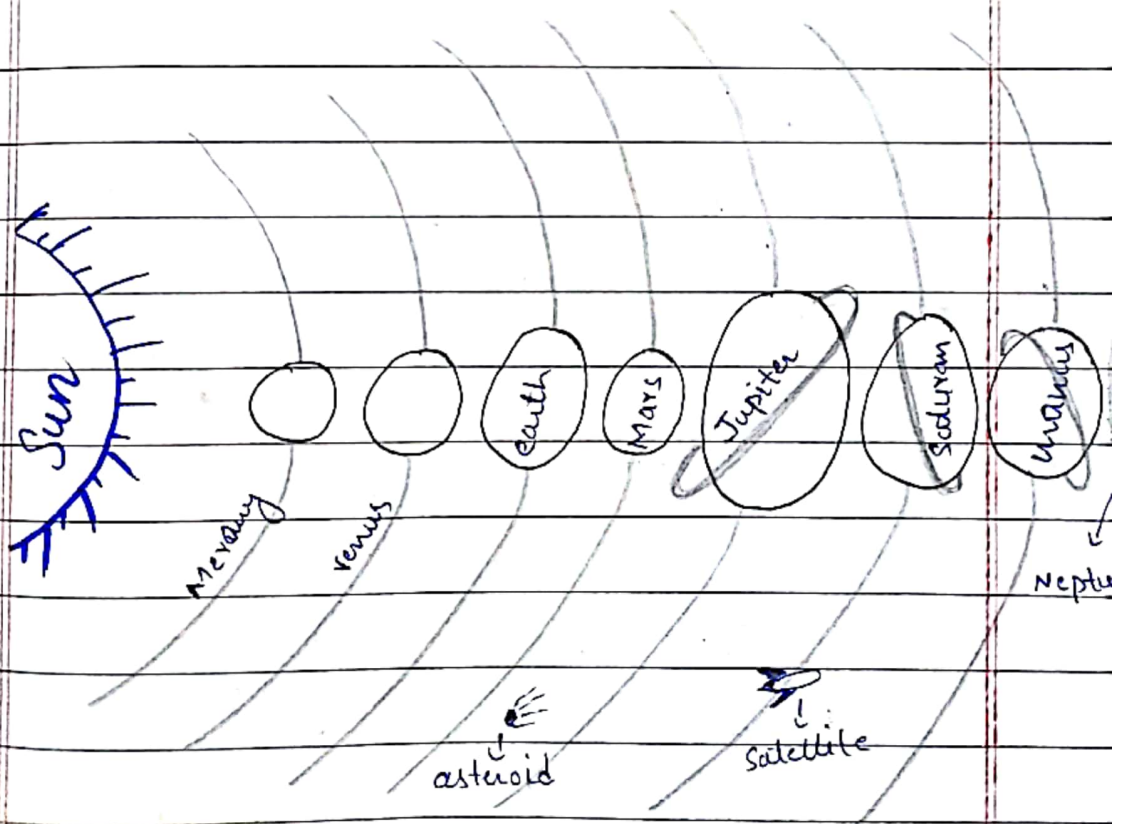
Satellites: Natural and Artificial.

"Our solar system includes the sun, eight planets, dwarf planets, satellites, asteroids and comets".

(NASA)

Origin of Name:

The word 'solar' is used to describe things related to sun. while the word sun comes from Latin word 'Solis' which means sun.



: General Sketch of solar system:

Q NO 4 (b)Pituitary Gland:

It is also called as "master gland." It is located in the skull beneath the brain. It regulate all the other glands secretion.

Function / Importance of Pituitary Gland:

It is a master gland of endocrine system that get information from brain to regulate and monitor the function of other glands.

Growth hormone:

It produce the growth hormone to regulate the growth of an individual. The over secretion of this hormone cause a condition "Gigantism" (over growth) and its under secretion cause "dwarfism". Therefore;

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it monitor and regulate the production  
of growth hormone.

### Oxytocin and Prolactin:

It plays another important role in production of milk in lactating women with help of hormones like oxytocin and prolactin.

### Sexual characteristics:

It produce "Luteinizing hormone" that produce "estrogen" in women and "testosterone" in men to develop secondary sexual characteristics.

### Blood pressure and Hemostasis:

It regulate the blood pressure and water balance in the body with the help of ADH or vasopressin hormone.





Q no 4 (c)

c) Mol

A) RAM and ROM:

boan  
all

Abbreviation:

Ram stands for "random access memory".

while Rom stands for "random only memory".

Storage:

Ram is used for temporary file storage or store the working files while rom is used as a permanent file storage system.

B) USB:

It is stand for "universal serial bus". It is an external storage device that is used to store and carry file from one place to other.

c) Mother board:

It is main board of the system with which all other accessories are connected.

