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Q What is black hole? What is expected inside it? How black hole formed and discovered?

Introduction:

A black hole is a region where the pulling force of gravity gets too strong. This occurs at the end of star life. The gravitational pull gets too strong after the death of a star and it turns into a black hole. It has great gravitational pull that even light cannot escape.

Formation of black hole:

A black hole is formed when the star exhausted from its thermomolecular activity at the end of its life. The core become unstable. The gravitational pull get too strong. The outer layer of the stars

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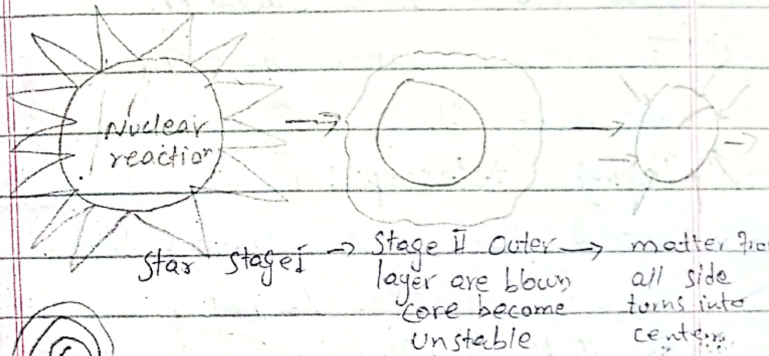
are blown away. The matter from all side move towards the center. The star turns into a black hole. It has great intensity and great gravitational pull.

Parts of black hole:

Black hole

horizen

Singularity



Black hole

strong intensity + strong gravitational pull

Formation stages of Black hole

(i) **horizen:** Horizen is the part of a black hole which has stronger gravitational pull and stronger intensity.

(iii) **Singularity:** Singularity is the inner part of black hole. The scientist cannot discover about its structure. The law of physics cannot apply in this part.

How Black hole discover:

(i) There are various ways for discovering black hole.

(i) **Through telescope:** The scientists discover black hole through telescope which detects the X-rays.

(ii) **gravitational influence:** Astralagist discover the information about black hole through the gravitational influence upon stars.

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Structure of Sun?

The sun is the main part of our solar system. Its surface temperature is about 5500°C .

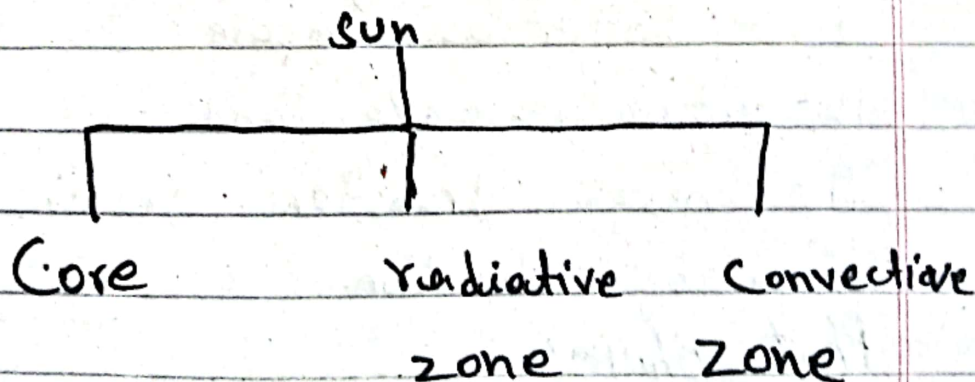
It gives energy due to nuclear fusion reaction. The million of Hydrogen atoms convert into Helium. 600 million of H atom convert into He in a second.



Structure of the Sun:-

The is divided into three main parts.

Structure of the



Core:

Core is the most inner part of the sun. It produces

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energy through nuclear fusion reaction. Its surface temperature is about 15 million °C. It is very hottest part of the sun.

Radiative zone:

It is also a hotter and denser part of the sun. The He energy moves towards the sun in the form of radiations.

It stay here. The He energy stay here around 1 million years.

It is also a very hot part of the sun.

Convective zone:

This zone is not hotter as compared to the radiative zone and core.

The energy transfers in the form of convection.

Photosphere:

It is a layer which separates the inner surface of the sun from the

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outer atmosphere of the sun. It gives energy to the earth. The earth takes light takes 8 min to reaches the earth. It is the visible part of the sun. We can see this part of the sun.

atmosphere:

The atmosphere can be divided into two parts

atmosphere



Chromosphere

Corona.

Chromosphere:

It is the thick layer of gases which are present at the surrounding of the sun.

Corona:

It is the thin layer of gases around the sun. It extends million km around the sun. It has intense temperature. Hot spot on the sun which come and disappear gives

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energy to the corona. Electric currents of the sun provided the energy to this corona. It extends million km around the sun.

It can be seen through chromograph or during solar eclipse.

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Differentiate between the solar eclipse and lunar eclipse?

Solar eclipse and lunar eclipse have great difference between them.

They occur when one celestial body stops sunrays to the other celestial body. Here are comparison between solar and lunar eclipse.

	<u>Solar</u>	<u>Lunar</u>
<u>difference</u>	<u>Eclipse</u>	<u>Eclipse:</u>
① Cause	Solar eclipse occurs when the moon occurs between the sun and the earth.	It occurs when earth blocks the sunrays on moon. It comes between the sun and the moon.
Time	It occurs at day time.	It occurs at night time.
Duration	It stays for few minute.	It stays for a few hours time.
Types	There are three types of solar eclipse, Total	There are three types of lunar eclipse, Penumbra

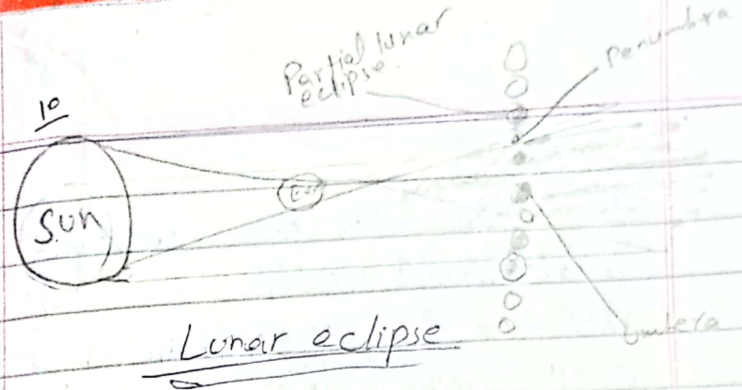
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Solar eclipse, Umbra and partial solar eclipse and annular eclipse.

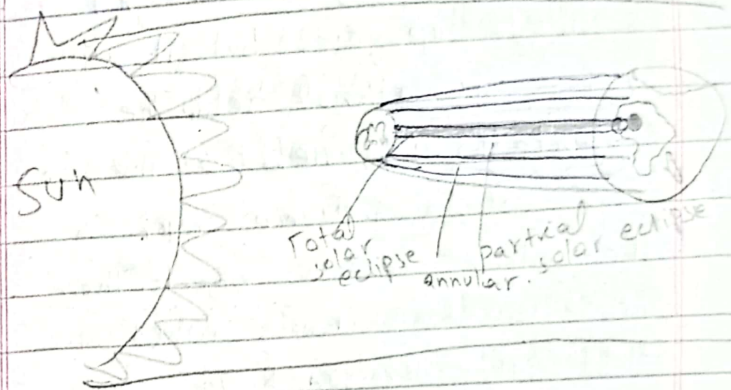
Observation It is not safe to see directly solar eclipse one has to wear glasses or protective eye wear before seeing otherwise it will damage your eyesight

Covered Areas It can be observed only a few mile of the earth. It covers a very short area of the earth

It can be covered a larger area of the earth. It can be observed in many countries of the world.



Lunar eclipse



Solar Eclipse

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Why the sun has so strong gravitational field?

The sun is the main component in the solar system. Although it is made up of gases but it still has a gravitational field. The gravitational field of the sun has a strong influence over the other celestial objects. There are various evidences which show that why the sun has a strong gravitational field.

Newton Law:

According to the law of Newton the gravity is directly proportional to the mass of the object and the distance. The sun has great mass among the other solar bodies. Although it has great influence on the distance among the objects but it has a gravitational field due

to its mass.

Mass of the sun

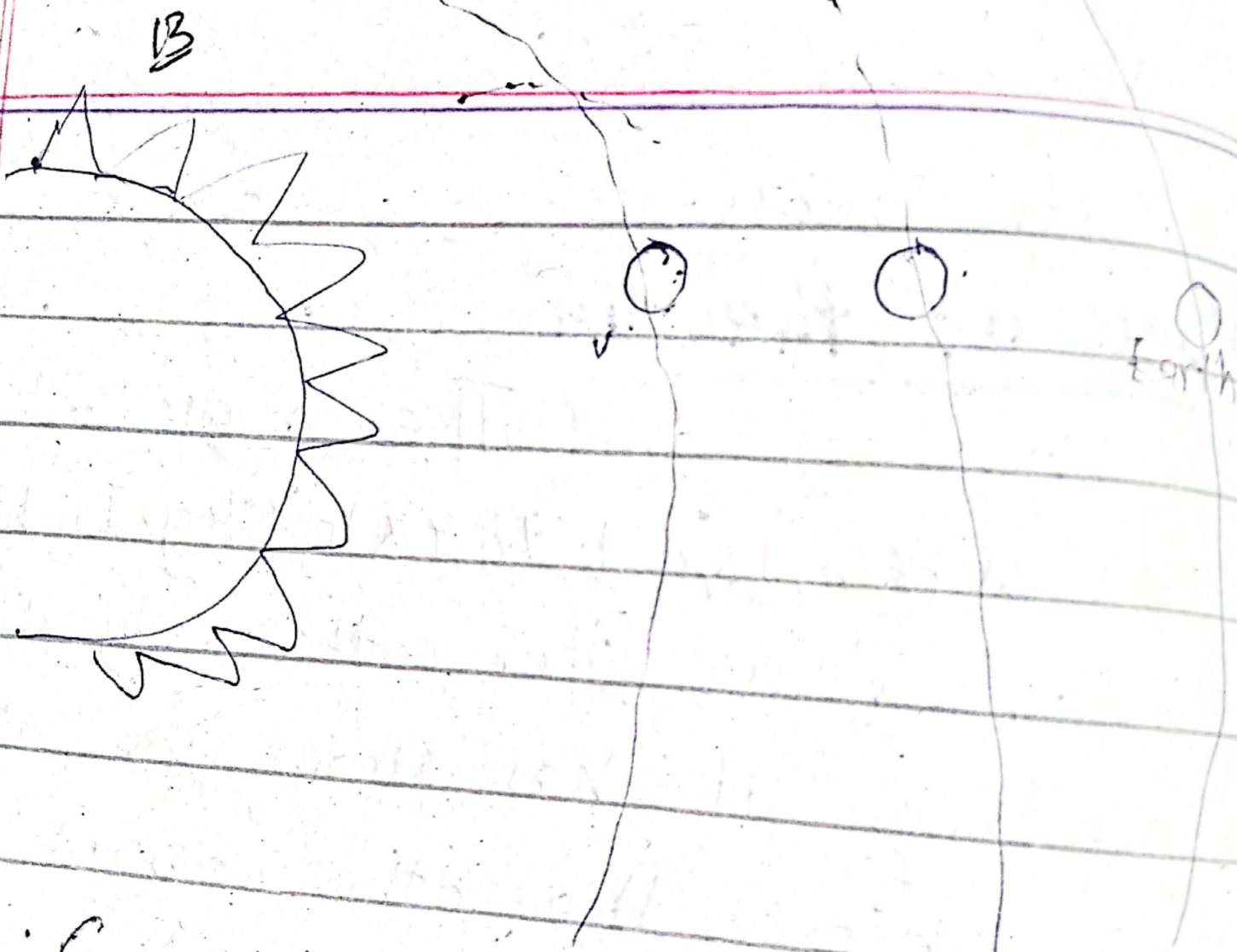
The mass of the sun is 1.989×10^{30} kg. It has greater mass than other objects. therefore it has strong gravitational field among the other objects.

Density of the gas:

The density of the gas in the internal core is more denser than the other gases. Its density also impact on the gravitational field.

Sun's gravitational Field.

The sun has great gravitational field in the objects. The centripetal force in the sun impact upon the objects which keeps the objects in its orbit and centrifugal force which kept it away from the sun.



Gravitational field of the sun over earth

What are aouras and types of aoura?

Aoura

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Vaccination, Types of vaccination and also describe the side effects of vaccine?

Vaccine:

A vaccine stimulates the immune system against diseases which are caused by microbes, bacteria or viruses.

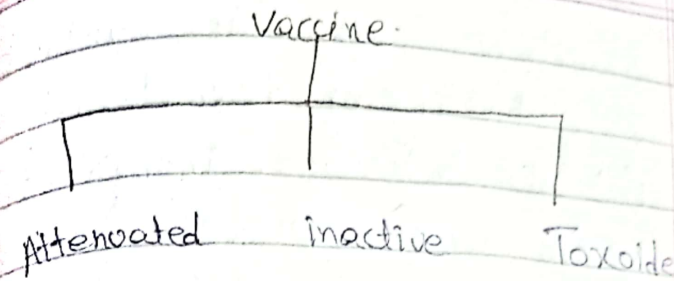
Uses:

A vaccine helps to prevent us from viral diseases.

Formation:

A vaccine forms from the killed, toxins or live microorganism of viruses or bacteria which are caused by the same disease. It stimulates our immune system. Our immune system defends us from this type of strong viral disease which due to the vaccination of this disease.

Types of vaccine



(i) Attenuated: This type of vaccine is formed from the live bacteria. MMR is the example of this vaccine.

(ii) inactive vaccine:

This vaccine is formed from the killed or inactive microorganism. IPV is formed from inactive bacteria.

Toxoids vaccine:

Vaccine is formed from the toxin or diluted microorganisms.

Side Effects of vaccine:

Some parents are reluctant to the vaccination. They avoid their children from vaccine. The vaccine

effects on human in form of soar throat or fever but it stimulates our immune system in this way. In this way our body will be able to protect us from disease. There is no kind of serious threat or side effect of vaccine.

→ Benefits of vaccine:

Vaccine is better than any other form of treatment against viral diseases. It is 90-100 better treatment for such disease.

Effects of vaccine:

Some vaccines are showing their effectiveness till life time but some show effectiveness only for a limited time period. A man has to vaccine himself after their specific duration.

Vaccines according to disease.

Vaccine	disease.
BCG	TB
MMR	Measles Mumps and Rubella.
IPV	Polio

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Why the excessive use of chemical fertilizers should be avoided?

Fertilizers

Fertilizers are any organic or inorganic material which enhances the quality of soil and increases the rate of production. There are 16 essential elements which are needed to fertilize soil.

Types of fertilizers:

There are two.

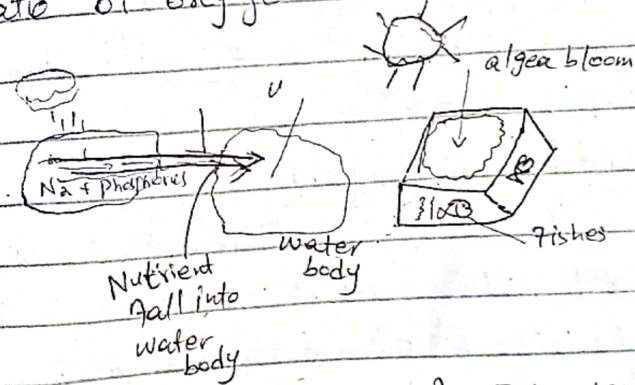
basic types of fertilizer micro which are not required in a great amount while macro fertilizers which are required in greater amount.

Disadvantages of chemical fertilizers.

If we use the fertilizer in a great amount then we have to face environmental degradation and health hazards.

Eutrophication:-

When the nitrogen or phosphorus are present in the surface. The rain wash away these nutrients and put it down into stream or river. These nutrients make algae bloom in the water bodies. This process of eutrophication did not allow the sun rays reaches to the water depth. The aquatic life would die at the slow rate of oxygen in the water.

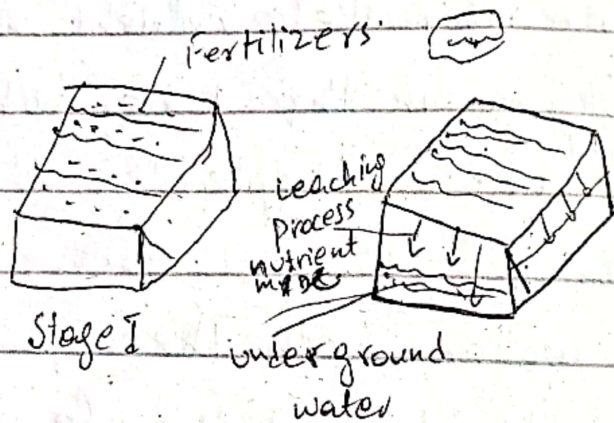


Process of Eutrophication

2: Water table impact:-

If the farmer do not use animal manure or fertilizers properly. It would go

go down in to the because of leaching process. Highly nutrients dissolved water mixes in to underground water which is not contain the good quality of water



Leaching process Nutrient
mix to the ground water

Food Chain impact:

When the basic food wild disturb in the form of the death of marine food sources then it impact on the whole food chain.

Acidic soil:

It becomes the soil acidic. When the fertilizer is

Present in the form of more concentration it would impact the soil acidity.

Pakistan has to face soil acidity.

It has lost many acres due to soil acidity.

→ Health hazards:

Fertilizers has brought health hazards. People drink nutrient riched water they become the victim of various diseases such as blue baby syndrom, kidney problems, impact on the life of humans.

• Preventions of Fertilizers.

Specific amount: specific amount of Fertilizers should be used.

Livestock waste: live stock waste should be kept away from water bodies.

Crop covers: various kinds of grass should be planted which absorbs extranutrients

Plantation: Trees should be planted near water bodies which absorb the greater amount of nutrients

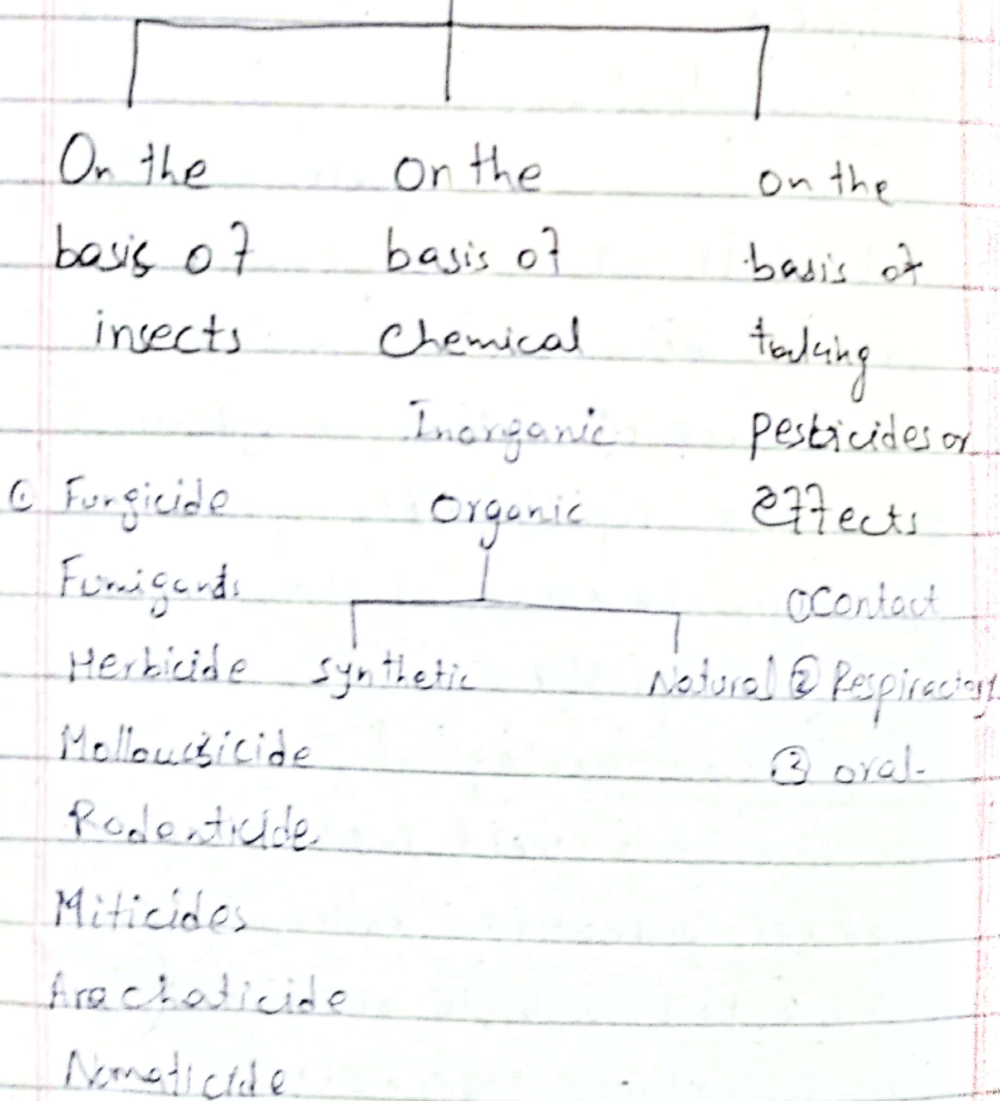
Classification of Pesticides? Are they lethal for mankind?

Pesticide:

It is any substance which are preventing, killed or the pests which are harmful for economy of people.

Classification of Pest

Pesticides



On the basis of insects

Fungicide:

This kills the fungus like molds etc.

Fumigant:

This pesticide is used in the form of spray in big buildings.

Herbicide:

This is used for the abolishment of herbs weed and other weeds etc.

Rodenticide:

These are used for vanishing rodents.

Miticide:

These are used for killing mites.

Molluscicide

These are used for killing snails etc.

Arachnidicide:

This is used for killing spiders.

Nematicide:

This is used for killing nematodes etc.

Classification On the Basis of chemical.

Organic:

Organic fertilizers are complex based structure. This is not water soluble. It can be divided into two forms:

① Natural Fertilizer:

These are formed in nature. Naturally they are found.

Synthetic fertilizers:

These are formed through various artificial ways.

Classification

Inorganic fertilizers:

Inorganic fertilizers have not complex structure. They can easily dissolve in water.

Classification on the Basis of Effect

1) Oral effect: These pesticides are taken orally.

2) Stomach effect: These pesticides effect on the stomach of the pests or insects.

3) Respiratory effect: These are effected through respiratory system.

Effects of Pesticides:

Water contamination:

Excessive use of pesticides upon the farms may effect on fertilizers. Land water It may enter under ground water bodies, which contaminate the water system. They percolate, runoff of

1) Impacts on food:

It impacts on food directly or indirectly. It enters into food may be direct application

upon the fruits, or it may enter in to food chain indirect way.

Enhances the Resistance.

The insects show their resistance against traditional pesticides. Excessive use of pesticides enhances the resistance quality of pests. There are 500 pests which show resistance against traditional pesticides.

Human Health:

It impacts on the health. It is the cause of serious disease like cancer, disturbance of endocrine system, and the reproductivity process.

It becomes the cause of skin irritation and eyes problems.

Impact on ecological system.

It also kills useful insects e.g bee reduces pollination, destroys habitats kill non target birds or endangered species, reduces biodiversity.

Soil pollution

waste from pesticides
industries contain pollutants resistance
to degradation by chemical biological
or photolytic processes.

Semiconductors are the brains of modern electronic? Explain in detail

What quotation means?

Introduction:

Semiconductors are the building block of modern electronic devices. These are called brain of modern electronic devices.

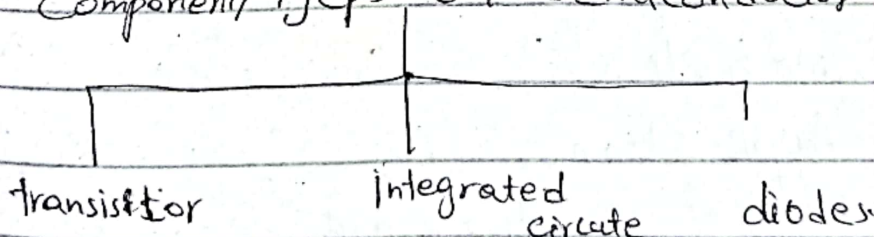
Brain of Devices:

These made such components like transistor, integrated circuits and diodes etc which are the basic components of devices.

Number of Semiconductor

There are more than 100 billions semiconductors which are equal to galaxies and stars in our universe in the world.

Component/Types of Semiconductor



(i) Transistor:

Transistor are used in amplifying electronic signals in devices.

(ii) Integrated circuits:

These are made up from transistors which are used in operating complex processes in devices.

(iii) Microchip:

Microchips are made up from a number of transistors. Microchip has such a great number of semiconductor which are equal to the stones in pyramids in Giza.

IDMs:

These are semiconductors firms which perform both function of fabless of semiconductor and integration.

Application:

These are used in

telephones, computer, cell phone
and various electronic devices.