



Rishu Ray (VIIIth) Roll:- 62nd classmate

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The Universe

1. What is universe?

Ans:- The universe is everything that exists - stars, planets, moons, other heavenly bodies and vast empty space between them.

2. Why venus is called hottest planet?

Ans:- Venus is called hottest planet because it has an atmosphere containing high percentage of carbon dioxide.

3. Why mars called a red planet?

Ans. The rust-coloured soil of mars gives it a red colour. So, it is called a red planet.

4. What is the distinctive feature of:-

i.) moon:- Moon is dry and barren with no atmosphere. Its surface is covered with several craters and mountain.

ii.) Jupiter:- Jupiter is the largest and the heaviest planet of our solar system. It also has the largest number of moons. The strong winds blowing on it, and on the gas giants, create light and dark areas, giving them a striped look. It has faint rings around it.



iii) Saturn:- Saturn has visible rings of gas and it is lighter than water. It has 2nd largest moon "Titan".

5. What difference b/w stars and planets?

Ans:

Stars

Planets

- | | |
|---|--------------------------------|
| * Emit their own light | * Do not emit their own light. |
| * Made up of hot gases | * Made up of rocks |
| * when seen from the Earth, the twinkle | * Do not twinkle |
| | * Smaller than stars |
| * Massive in size. | |



Light

1. What is light. write two properties of light.

Ans: Light is a form of energy which ~~make~~ give sensation of seeing of object.

i) Light ~~is~~ ^{travel} in a straight line

ii) Speed of light is 3×10^8 km/sec.

2. Define - principal focus and aperture of mirror.

Ans: Reflecting surface of the mirror is an aperture of mirror. The portion of mirror from which reflection of light actually take place is called aperture of mirror. impact the size of mirror represent the aperture.

Line parallel to the principal axis and meet at a point after reflecting this point is called principal focus.

3. Write the nature of the image formed by plane mirror.

Ans: Following are the nature of the image formed by plane mirror :-

* The image formed is erect.

* The image is of the same size as the object.

* The image is laterally inverted.

* The image is virtual.

* The image is as far behind the mirror as the object is in front of it.



4. Write the uses of concave and convex mirror.

Ans:- Uses of concave mirror

⇒ Concave mirrors are used in torch and car headlight to reflect the light of the bulb to form a powerful beam of light.

⇒ It is used in solar cooker.

⇒ It is used in telescope.

⇒ A dentist uses a concave mirror to see a magnified image of the teeth.

* Uses of convex mirror.

⇒ Convex mirrors are used as rear view mirrors in vehicles.

Since a convex mirror forms smaller images of objects, it can be used to view a much larger area than would be possible with a plane mirror.

5. Define Myopia and hypermetropia. Write their cause.

Ans:- * A person with myopia, or near-sightedness, is unable to see distant objects clearly, but has no difficulty in seeing nearby objects. Myopia is caused by the elongation of the eyeball.

* A person with hypermetropia, or far-sightedness, is unable to see close objects clearly, but has no difficulty in seeing distant objects. The usual cause of hypermetropia is the shortening of the eyeball.



Sound

Q.1. What is sound? How it is produced?

Ans. Sound is a type of energy which make us sensation.
It is produce by the vibration of object.

Q.2. What is wave? What are its types?

Ans. Wave is a disturbance of particles of a medium.

* wave are of two types:-

i.) Mechanical wave:- These wave required medium to travel. Eg:- sound wave.

ii.) Non-machanical wave:- These wave does not required medium to their propagation.

Ex:- light wave.

Q.3. What are the different type of machanical wave define them.

Ans:- Machanical wave are of two types:-

i.) Longitudinal wave:- In this wave particles move in the direction of the motion of wave and density of medium change continuous in the form of compression and rarefaction.

ii.) Transverse wave:- In this wave particles moves vertically upward and downward direction in form of creast and trough.



Q.4 What is wavelength and frequency of wave?

Ans. The distance between the two nearest troughs of a wave is called its wavelength. wavelength is denoted by λ .

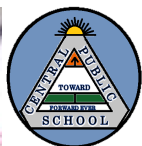
The number of wave cycles of a wave that pass a given point in one second is called its frequency of wave.

Q.5. A vibrating obj. complete 20 compression and 20 rarefaction in 0.2 sec. Find its frequency and timeperiod.

Ans:- Frequency = No. of oscillation in 1 sec.

$$f = \frac{20}{0.2} \times 10^5 = 100 \text{ Hz}$$

$$T = \frac{1}{f} = \frac{1}{100} \text{ sec} = \underline{\underline{0.01 \text{ sec}}}$$



Combustion & Flame

1. What is Combustion and flame?

Ans:- When a substance combines fast with oxygen giving out heat (and light), the phenomenon is called combustion.

Flame is a gaseous part of fire generated on the burning of liquid fuel.

2. What are the different types of Combustion, define them.

Ans:- There are three types of combustion:-

i) Rapid combustion:- The substance burn rapidly to produce heat and light, Ex:- matchstick, LPG, etc.

ii) Spontaneous combustion:- The type of combustion in which a substance can burn without the application of heat is called spontaneous combustion. Ex:- Phosphorus.

iii) Explosion:- The type of combustion in which a substance can burn or explodes with the heat, light and sound and even evolution of a large amount of gas is called explosion. Ex:- Firecracker.

3. What are the characteristics of good fuel.

Ans:- Following are the characteristics of good fuel:-



- ⇒ Has a low ignition temperature.
- ⇒ Produces a large quantity of heat, that is its calorific value is high.
- ⇒ Has a moderate rate of combustion.
- ⇒ Is safe to store, handle and transport.
- ⇒ Does not cause pollution.
- ⇒ is cheap and easily available.

4. Why fire is caused by faulty wire can't be extinguished by water?

Ans. This is because water is good conductor of electricity and we may get electric shock.

5. Why is the soda-Acid fire extinguisher it work.

Ans. Soda acid types of fire extinguisher contain sodium bicarbonate solution. A small bottle contains concentrated acid and attached to the knob. When the knob is struck the bottle breaks and acid react with sodium bicarbonate and liberating large amount of CO_2 gas with great force. It forms a blanket around the fire, cutting off the air supply, due to which the fire gets extinguished.



Metals and Non-Metals

1. Write the physical property of metal?

Ans- Following are the physical property of metal:-

⇒ Generally solid at room temperature (except mercury)

⇒ lustrous

⇒ generally hard

⇒ generally have high density

⇒ malleable and ductile

⇒ good conductors of heat and electricity

⇒ generally have high melting and boiling points.

⇒ sonorous.

2. What are the chemical property of metal?

Ans- Following are the chemical property of metal:-

⇒ Form basic oxides when react with oxygen.

⇒ Form oxides or hydroxides when react with water and hydrogen.

⇒ Metal react with dilute acid and form salt and liberate hydrogen.

3. What is alloy? write any two examples with the name of its composition.

Ans- An alloy is a homogenous mixture of two or more metals, or one or more metals and a non-metal.

Ex:- Brass:- copper and zinc.

Bronze :- copper and tin.



Q.4 What is rusting? Write any three methods of preventing rusting.

Ans. Slow destruction of iron due to their interaction with the environment, this process is called rusting.

⇒ Three methods of preventing rusting are:-

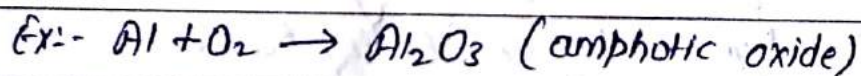
i) Galvanizing.

ii) Electroplating.

iii) Anodizing.

Q.5 What is amphoteric oxide? Explain giving an example with equation.

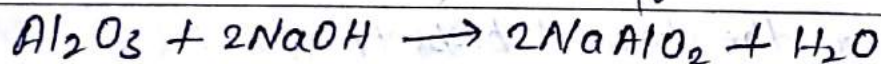
Ans. An oxide which behaves like acid as well as base is called amphoteric oxide.



when react with acid as base form salt and water

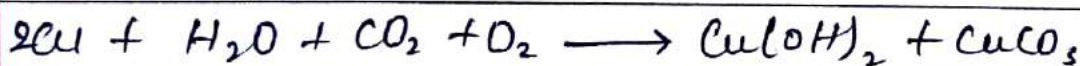


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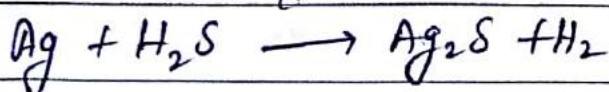


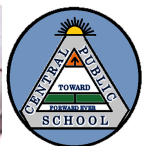
Q.6 Write the equation for rusting of copper and silver.

Ans. Equation of copper:-



Equation of silver:-





Q7. How is Anodizing of Aluminium carried out?

Ans. Aluminium is a very reactive metal, so, it reacts even with the air (oxygen) present in atmosphere and forms a layer of aluminium oxide over it. This will help in preventing it from further corrosion.

Q8. What is chemical property of non-metal?

Ans. Following is the chemical property of non-metal:-

- ⇒ When reacts with oxygen forms acidic oxides.
- ⇒ Do not react with water and acid.



Chemical Effects of Electric Current

Q. What is difference b/w AC and DC?

Ans.

AC

DC

i) Alternative current can flow in inward and back

i) Direct current always flow in fixed direction.

ward direction.

(ii) It flow from (-)ve to (+)ve.

ii) Its direction is not fixed

Q. What are the advantage of electroplating iron with chromium?

Ans. Chromium resist rusting and improve the shining of metal/iron. It also resist scratches.

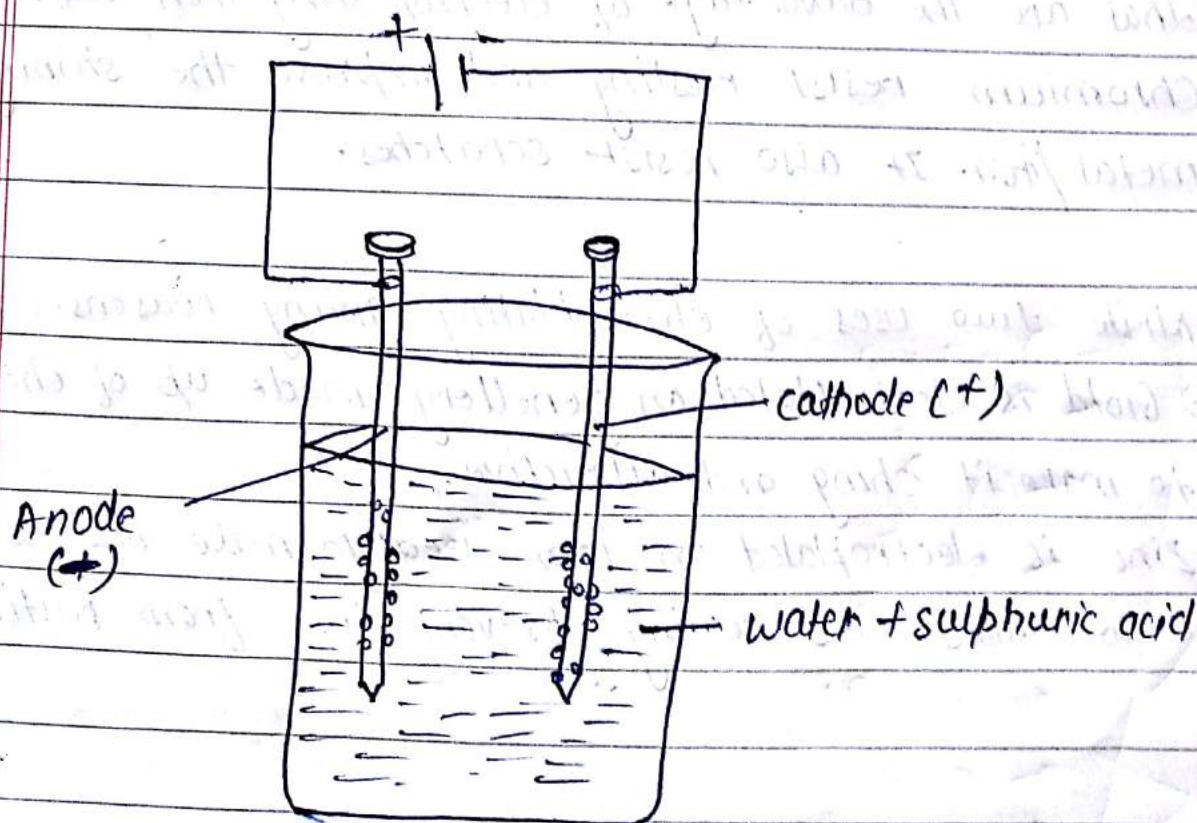
Q. Write two uses of electroplating giving reasons.

Ans. i) Gold is electroplated on jewellery made up of cheaper metal to make it shiny and attractive.

ii) Zinc is electroplated on iron used to make bridges and automobiles. This coating prevent iron from rusting.

Q. Explain the process of electrolysis of water.

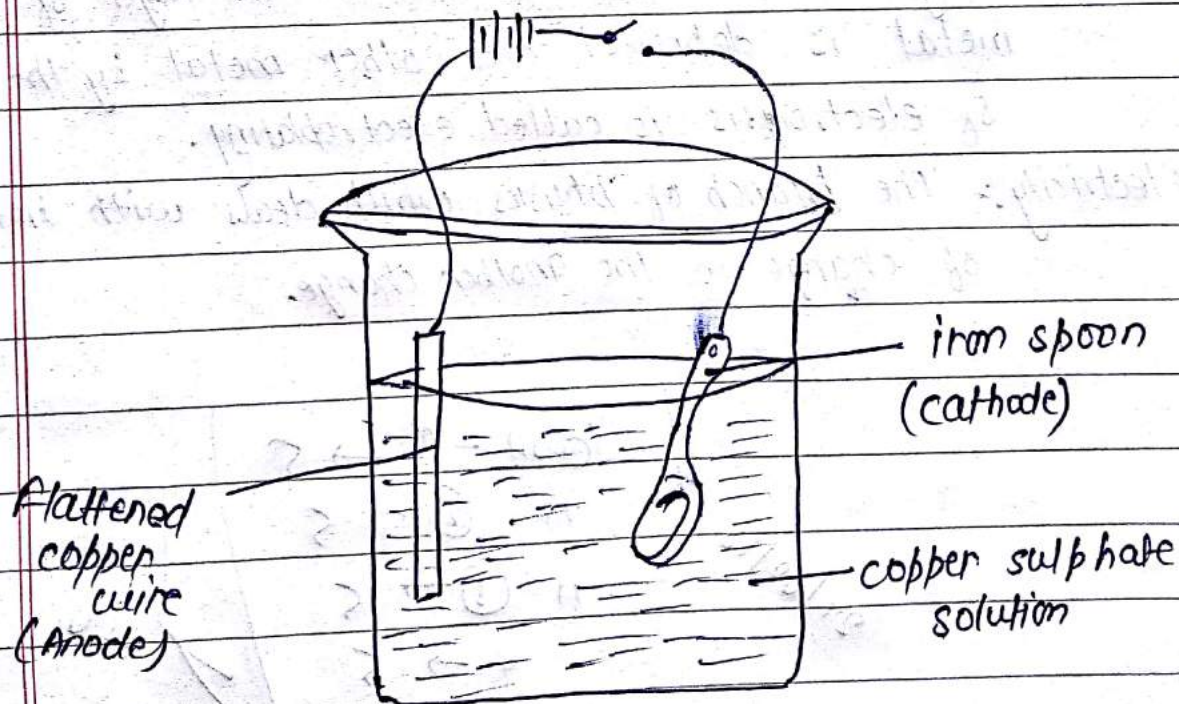
- Ans. i) Take a beaker which contain acidified water. ($H_2O + H_2SO_4$)
- ii) Dip two iron nails as electrodes into it.
- iii) Connect one iron nail to (+)ve terminals and it becomes anode and second iron rod to (-)ve terminals and it becomes cathode.
- iv) When current flows through water, then it splits up into H^+ ions and OH^- ions.
- v) H^+ ions move towards cathode to gain electrons and change into H_2 gas. $H^+ + e^- \rightarrow H_2$
- vi) OH^- ions move towards anode to loose electrons and form O_2 gas. $OH^- - e^- \rightarrow O_2$
- This is called electrolysis of water.





Q. Explain the process of electroplating iron with copper.

- Ans:-
- i.) Take a beaker and fill $\frac{3}{4}$ th of it with CuSO_4 solution.
 - ii.) Put copper rod and iron spoon in solution and connect them with (+)ve and (-)ve terminals of battery respectively.
 - iii.) When electric current pass through solution it splits up into Cu^{+2} and SO_4^{-2} ions.
 - iv.) Cu^{+2} move towards cathode to gain electrons and deposited over iron as Cu atom.
 - v.) Cu as anode loose electron and change into Cu^{+2} ions.
 - vi.) Cu^{+2} goes into solution and form CuSO_4 .
 - vii.) This process continue and a layer of Cu deposited over iron.



Electroplating of copper.



Q. Define the terms:-

i.) Electrolyte:- A substance which conduct electricity in liquid state or when dissolved in water and breaks up chemically during the process is called an electrolyte.

ii.) Chemical effect of electric current:- When current flows through liquid, it splits up into ions. This process is called electrolysis and this effect is called chemical effect of electric current.

iii.) Anode:- Electrode which connected to the (+)ve terminal of the battery is called Anode.

iv.) Cathode:- Electrode which connected to the (-)ve terminal of the battery is called cathod.

v.) Electroplating:- The process in which the layer of one metal is deposited over other metal by the process of electrolysis is called electroplating.

vi.) Electricity:- The branch of physics which deals with interaction of charge to the another charge.



Test - ① → 5

11. ② → 5

11. ③ → 5

4 → 5

5 → 10

6 → 6

7 → 7

8 → 7

9 → 6

10 → 7

30

20

13

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Name:- Rishu Raj
class:- VIIIth 'A'
Roll:- 62nd
Date:- 27/02/18

classmate

Date _____

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Water & Air Pollution

1. Define :-

Pollution:- The mixing of any unwanted particles is called pollution.

Eutrophication:- The enrichment of water by nutrients which lead to excessive plants growth and depletion of oxygen is called eutrophication.

Global warming:- The increase in the temp. of earth due to excess carbon dioxide in the atmosphere is called global warming.

2. What is potable water? Write any two way of making water pure?

Ans. The water which free from pollutants and is suitable for drinking is called potable water.

i-) Boiling the water for 15-20 min to kill the germs.

ii-) Ultraviolet light - UV light is used in water purifiers as it kill the germs.

3. Write two ways to conserve water?



Ans. Two ways to conserve water are:-

- i.) Recycling water and using it several times before disposing it.
- ii.) Planting trees increases the level of ground water.

4. How are natural spring formed?

Ans:- The groundwater run along the surface of the non-porous rocks, when the groundwater comes out of the surface at same place, then natural spring is formed.

5. Write two main cause of air pollution and their effects.

Ans:- Two main cause of air pollution and their effects:-

i.) Suspended particulate matter - SPM is unburnt carbon particles which cannot be filtered by the hair of our nose. If inhaled, it causes major lung diseases.

ii.) Carbon monoxide:- It is ~~not~~ one of the most dangerous pollutant and is extremely poisonous. It mixed with the blood and prevent it from carrying oxygen. Due to lack of oxygen, one can also die.

6.) How do they work?

i.) Catalytic converter:- It is a special system which is fitted in the silencer. It has fine pores which stops the harmful gases containing lead from going out and rest of the harmless gases are released.



Electrostatic precipitator!- It is used in factories to remove particles of solid such as carbon from the waste gases before they are released in the air.

7. What is acid rain? How is it caused by?

Ans. Rain water mixed with sulphuric acid or nitric acid is called acid rain.

When coal is burnt, then sulphur dioxide is given off then SO_2 combines with O_2 and forms sulphur trioxide ($\text{SO}_2 + \text{O}_2 \rightarrow \text{SO}_3$). When sulphur trioxide reacts with the water in the clouds, it forms ($\text{SO}_3 + \text{H}_2\text{O} \rightarrow \text{H}_2\text{SO}_4$) sulphuric acid (H_2SO_4) when comes on the earth in the form of acid rain.



Reproduction

1. What is reproduction. Why is it an essential life process.

Ans. The production of some kind of offspring through some certain process is called reproduction.

It is an essential of life-process because it help to continue the generation to generation.

2. Define :-

i.) Menstruation :- when the ovum is not fertilize with sperm, it expelled out in the form of blood and uterus muscles, this shedding is called menstruation.

ii.) Cell division :- The formation of new cell by splitting up of old is called cell division.

iii.) Metamorphosis :- The growth of larva into adult frog with drastic change is called metamorphosis.

iv.) Budding :- The formation of new plant through its part of plant or bud is called Budding.

v.) Puberty :- The stage of life in which body able to reproduce is called puberty.

3.) Distinguish b/w the following terms.



- | i.) External fertilization | Internal fertilization |
|--|---|
| * Reproduction take place out side the female body | * Reproduction take place inside the female body. |
| * Ex:- Human Frog | * Ex:- Human Human. |

- | ii) Asexual reproduction | Sexual reproduction |
|----------------------------------|-----------------------------|
| * Only one parent would involve. | * Two parent would involve. |
| * Gametes are not required | * Gametes are required. |
| * Ex:- Plants | * Ex:- human |

- | iii) Viviporus | Oviporus. |
|---|--|
| * The animals that give birth to young ones are called viviporus. | * Animals that lay only egg is called oviporus |
| * Ex:- Human | * Hen. |

5. How does a zygote develops into an individual?

Ans) i) Firstly, the zygote travel down the oviduct and divides over and over to form a ball of cell.

ii) Then, the cells begins to form different tissues and often that organs of the body.

iii) The embryo gets embedded in the wall of uterus.

iv) Embryo further develops organs by taking nutrition from the placenta.

v) After about 8 weeks, the different body parts of embryo can be recognized, and the embryo develops into a fetus.

vi) The individual is born after the development is completed.



Coal and Petroleum

1. What is natural resources? Define its kind.

Ans. Anything which satisfy human requirement to exist on the earth.

There are two types.

i) Renewable Resource :- These resource that can replinised itself faster than it is used. Ex:- water, air and sunlight.

ii) Non-Renewable Resource :- Those resources that can't replinshed itself faster than it is used. Ex:- sun, coal & Petroleum.

2. Why need of conservation today is more as our ancestors did?

Ans. Today, conservation is more needed because of the increase in population, due to which there more demand of resources, industrialization and urbanization are also the reasons for the need of more conservation of resources than our ancestors.

3. How coal formed? write the types of coal and uses of the product of coal obtained from destructive distillation.

Ans:- When dead remains of plants get buried inside the earth, then after millions of years, they slowly get converted into coal due to high temperature and pressure.

Types of coal are :-



- i) Anthracite:- It is the best variety of coal containing about 96% of carbon.
- ii) Bituminous:- It contains about 85% of carbon.
- iii) Lignite:- It contains about 38% of carbon.

Uses of the product formed by destructive distillation of coal:-

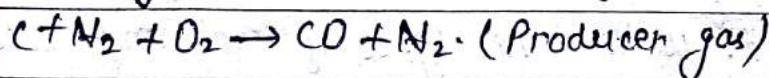
- i) Coke:- It is used as a fuel for furnace and blacksmithing.
- ii) Coal gas:- It is mainly used as fuel in industries and was earlier used for cooking.
- iii) Coal tar:- It is used to manufacture paints, perfumes, synthetic dyes, etc.
- iv) Ammonium compounds:- It is used to make fertilizers.

5. Why is petroleum called black gold?

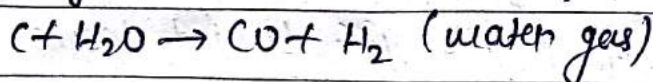
Ans. Petroleum is a black liquid and is very valuable thus it is called black gold.

6. How producer gas and water gas are obtained. Explain with equation.

Ans. Producer gas:- when air passes through red hot coke, then producer gas is formed.



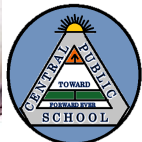
Water gas:- When steam passes through white hot coke then water gas is formed.



7. Write the full form of CNG and PCRA.

Ans. Full form of CNG:- Compressed Natural Gas.

Full form of PCRA:- Petroleum Conservation Research Association.



Reaching The age of Adolescence.

1. What do you mean by adolescence?

Ans:- The period following the onset of puberty during which a young person develops from a child into an adult.

2. Why does adolescent look after his physical health?

Ans:- During adolescent there is a rapid growth of mental and physical health. Therefore, looking after physical and mental health is of utmost importance.

3. Why do adolescent some find themselves confused and insecure?

Ans:- Intellectual development occurs during adolescence to transform the individual from a child to an adult. As a result of trying to adjust to the change in the body and mind, adolescent find themselves feeling confused and insecure.

4. What is Gland. What are its type.

Ans:- An organ in the human or animals body which secretes particular chemical substances for use in the body or for discharge into the surroundings.

Its types:-

(i) ~~Adrenal~~ gland

(ii) ~~pancreas~~

(iii) ~~Exocrine~~ Exocrine gland

(iv) Endocrine gland



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Ans:- An organ in the human or animals body which secretes particular chemical substances for use in the body or for discharge into the surroundings.

Its types:-

(i) Adrenal gland

(ii) ~~Parathyroid~~

(iii) ~~Exocrine~~ Exocrine gland

(iv) Endocrine gland



5. Name four gland and its secretion.

Ans. Four gland and its secretion.

i) Adrenal gland — Adrenalin

ii) Pancreas. — Insulin

iii) Thyroid gland — Thyroxine

iv) Ovary — Oestrogen

6.) Why is pituitary gland is called Master gland?

Ans. The Pituitary gland is also called the master gland as it controlled the functioning of the other gland.

7. What causes pimples or acne in adolescent?

Ans:- There is a increase in the activity of sweat and sebaceous oil gland. This leads to increase sweating often resulting in body occur. The skin becomes oily. This often leads to appearance of acne and pimples on the face.

