

**(Tue) 19/5/20 CL-X, EVS,
CH-7 Topic (Renewable Energy)**

Home Assignment.....

- 1) What is renewable energy and examples?
- 2) What are five renewable resources?
- 3) How efficient is renewable energy?
- 4) Is renewable energy profitable?
- 5) Why renewable energy is the future?

... (To be continued next class.....)

Mathematics

Class-X

Ratio and Proportion

Date:-19.05.20

Question 1

An alloy consists of $27\frac{1}{2}$ kg of copper and $2\frac{3}{4}$ kg of tin. Find the ratio by weight of tin to the alloy

Answer 1

$$\text{Copper} = 27\frac{1}{2} \text{ kg} = \frac{55}{2} \text{ kg},$$

$$\text{Tin} = 2\frac{3}{4} \text{ kg} = \frac{11}{4} \text{ kg}$$

$$\text{Total alloy} = \frac{55}{2} + \frac{11}{4} = \frac{110+11}{4} = \frac{121}{4} \text{ kg}$$

$$\begin{aligned} \text{Now Ratio between tin and alloy} &= \frac{11}{4} \text{ kg} : \frac{121}{4} \text{ kg} \\ &= 11 : 121 = 1 : 11 \text{ Ans.} \end{aligned}$$

Question 2

Find the compounded ratio of:

(i) $2 : 3$ and $4 : 9$

(ii) $4 : 5$, $5 : 7$ and $9 : 11$

(iii) $(a - b) : (a + b)$, $(a + b)^2 : (a^2 + b^2)$ and $(a^4 - b^4) : (a^2 - b^2)^2$

Answer 2

(i) $2 : 3$ and $4 : 9$

$$\text{Compound ratio} = \frac{2}{3} \times \frac{4}{9}$$

$$= \frac{8}{27} \text{ or } 8 : 27$$

(ii) $4 : 5$, $5 : 7$ and $9 : 11$

$$\text{Compound ratio} = \frac{4}{5} \times \frac{5}{7} \times \frac{9}{11} = \frac{36}{77}$$

$$\text{or } 36 : 77$$

$$(iii) (a - b) : (a + b), (a + b)^2 : (a^2 + b^2)$$

$$\text{and } (a^4 - b^4) : (a^2 - b^2)^2$$

Compound ratio

$$= \frac{a - b}{a + b} \times \frac{(a + b)^2}{a^2 + b^2} \times \frac{a^4 - b^4}{(a^2 - b^2)^2}$$

$$= \frac{a - b}{a + b} \times \frac{(a + b)(a + b)}{a^2 + b^2}$$

$$\times \frac{(a^2 + b^2)(a + b)(a - b)}{(a + b)^2 (a - b)^2}$$

$$= \frac{1}{1} \text{ or } 1 : 1 \text{ Ans.}$$

Question 3

Find the duplicate ratio of

- (i) 2 : 3
- (ii) $\sqrt{5} : 7$
- (iii) 5a : 6b

Answer 3

- (i) Duplicate ratio of 2 : 3 = $(2)^2 : (3)^2 = 4 : 9$
- (ii) Duplicate ratio of $\sqrt{5} : 7 = (\sqrt{5})^2 : (7)^2 = 5 : 49$
- (iii) Duplicate ratio of 5a : 6b = $(5a)^2 : (6b)^2 = 25a^2 : 36b^2$

Home Work-

Q1.

Find the triplicate ratio of

(i) $3 : 4$

(ii) $\frac{1}{2} : \frac{1}{3}$

(iii) $1^3 : 2^3$

Q2.

Find the sub-duplicate ratio of

(i) $9 : 16$

(ii) $\frac{1}{4} : \frac{1}{9}$,

(iii) $9a^2 : 49b^2$

Q3.

Find the sub-triplicate ratio of

(i) $1 : 216$

(ii) $\frac{1}{8} : \frac{1}{125}$

(iii) $27a^3 : 64b^3$

Answer the following question based on the chapter **Acid bases and salt.** and **Analytical chemistry**

Assignment

Answer the following:

1. Name an acid that contains 4 hydrogen in it
2. Give an example of a metal oxide that can react with both acid and alkali
3. A salt gives pale green ppt with NaOH but white ppt. with barium chloride
4. What should we add to increase the pH value of a neutral solution.
5. Salts of which elements are generally coloured?
6. Name a reagent that can be used to distinguish between Zinc nitrate solution from magnesium nitrate
7. Name a chloride that forms a precipitate that is soluble in excess of ammonium hydroxide
8. Name 2 monobasic acid' containing nitrogen
9. Name three common indicators that can be used to distinguish acid and bases. Mention the colour change in each case
10. Name the salt formed by incomplete neutralisation of an acid by a base
11. Name a metallic hydroxide soluble in excess ammonium hydroxide solution
12. Define acid salt with example
13. Give the difference between acid salt and basic salt
14. How will you distinguish between Zinc oxide and calcium oxide
15. HCl is a strong acid but CH₃COOH is a weak acid. Why
16. Carbonic acid is a dibasic acid. Why
17. An aqueous solution of ammonium acetate is neutral in nature. Why
18. Lime juice has sour taste but lime water is slightly bitter. Why
19. An aqueous solution of sodium carbonate is alkaline but ammonium chloride is

acidic. Why

20. What is acidity of a base. Explain with example.

Give balanced equation for the following:

1. Molten sodium and chlorine
2. Calcium bicarbonates with dil HCl
3. Copper oxide and dil sulphuric acid
4. Aluminium and caustic potash solution
5. Zinc nitrate and ammonium hydroxide
6. Action of sodium hydroxide on aluminium hydroxide
7. Zinc is heated with sodium hydroxide solution
8. Decomposition of potassium nitrate.

DREAMLAND SCHOOL
BIOLOGY - CLASS 10 (2020 – 2021)
ASSIGNMENT

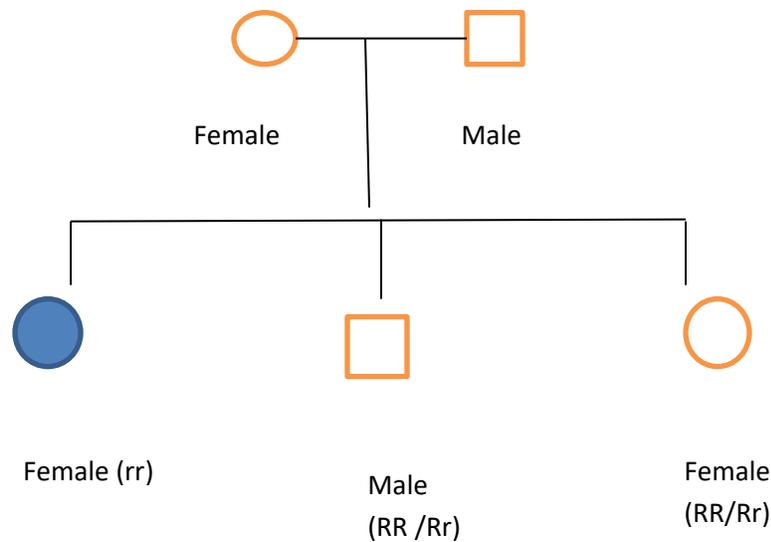
DATE - 19/05/2020

CHAPTER – GENETICS – SOME BASIC FUNDAMENTALS

DETAILED EXPLANATION

- **GENOTYPE** – The set of genes present in the cells of an organism.
- **PHENOTYPE** – The observable characteristics which is genetically controlled.

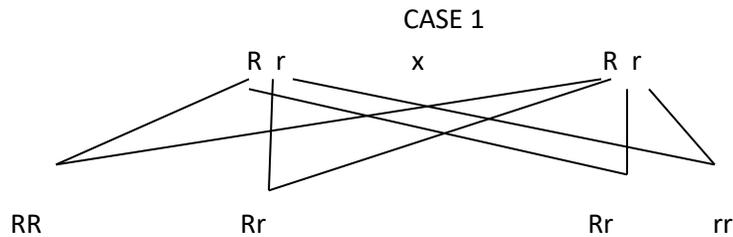
INHERITANCE OF CHARACTER FROM PARENT TO OFFSPRING



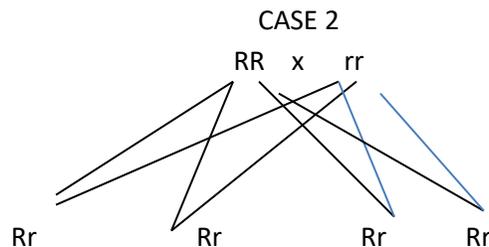
A pedigree (family) chart showing inheritance of the ability to roll the tongue.

Symbol O = female , square = male.

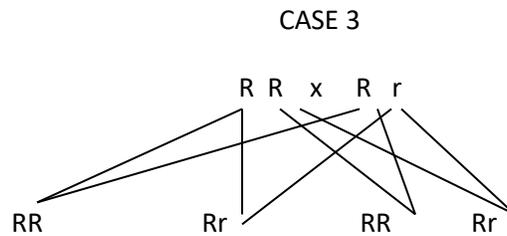
- Males are shown by square & females are shown by circle.
- Both father and mother are tongue rollers (hollow symbols represent the usual expressed character , i.e tongue rolling)
- Of the three children born, two can roll (hollow symbol) & one cannot roll (solid symbol).
- If they can roll the tongue (dominant character) that means they have either both the alleles dominant i.e., RR or Rr.
- If they cannot roll the tongue that means they do not have the dominant allele. Both the alleles here are recessive (rr).
- The recessive trait (rr) of non-rolling in one of the children could have come from nowhere but the parents.
- The nonroller 'rr' genotype must have received one 'r' gene from the mother & other 'r' gene from father.
- So each of the parents has to have r gene . moreover they also gave rise to childrens having R gene.



- So it can be concluded that each of the parents are heterozygous (Rr). dominant.
- If one parent was RR (homozygous dominant) and the other was rr (homozygous recessive). Then there was possibility that all children had genotype Rr .



- If, one parent was homozygous (RR) dominant & the other heterozygous dominant (Rr) then two children will have genotype Rr & two children will have genotype RR .



• **SEX – LINKED INHERITANCE**

Sex-linked inheritance is the appearance of a trait which is due to the presence of an allele exclusively either on the X chromosome or on the Y chromosome.

➤ **X – LINKED INHERITANCE**

Certain disorders caused due to heredity such as Haemophilia & colour blindness are more common in male than in female . such defects are due to recessive genes which occur on the X chromosome.

- The females have two X chromosome. So both can carry the disorder.
- Suppose for Haemophilia there can be three possibilities of genotype-
 1. $X^H X^H$ – H denotes that the female is normal. (XX)
 2. $X^H X^h$ – here the female is normal, i.e., they don't show the symptom but carry the disease. (XX^o)/ (XX^h)
 3. $X^h X^h$ – here the female is affected. ($X^o X^o$)/ ($X^h X^h$)

- In males there is one X & one Y chromosome. Here the Y cannot carry the disorder.
- There are two possibilities for genotype over here-

1. X^HY – here the male is normal . (XY)
2. X^hY – here the male is affected. (X^oY)/ (X^hY)

- Here there is no chance of being a carrier. Either normal or affected as Y chromosome does not bear anything.
- So, in females there is a chance that even if they carry the disease they will not show it. But in males if they carry the disease they will show it as there is no 2nd X chromosome that will carry dominant gene for Haemophilia and mask the effect of recessive gene .
- Hence males are more affected than females.

➤ **CASE 1 – The mother is normal & the father is haemophilic.**

		Mother	x	Father
		X^HX^H		X^hY
Possibilities of offspring				
	Female	X^H		X^H
Male	X^h	X^HX^h		X^HX^h
	Y	X^HY		X^HY

So there are 4 offspring - X^HX^h – normal female carrying the gene for haemophilia.
 X^HX^h - normal female carrying the gene for haemophilia.
 X^HY – normal male
 X^HY – normal male

ASSIGNMENT 7

- 1) Find out the possible offspring if the mother is carrier of colourblindness & father is normal. C denotes normal state & c denotes colourblind state.
- 2) differentiate between genotype & phenotype.

Class X

19.05.2020

History

The Second World War (1939-1945)

The First World War and its harsh peace treaties sowed the seeds for the Second World War. The similarity in its cause and characteristics with those of the First World War were superficial.

Causes of the Second World War

Though the German invasion of Poland was the immediate cause for the outbreak of the war, the real cause were much deeper and varied in character. These were as follows:

Dissatisfaction with the Treaty of Versailles

- The treaty by which the First World War came to an end, created more problems than it had solved. Germany had to cede many of its territories and many new nations were created. The treaty was based on the spirit of revenge and was forced on Germany.
- German colonies were forcibly taken away and divided among the victors. Germany, so that Poland could reap benefits, was divided into two parts. Germany was burdened with huge war indemnities, her military power also got reduced.
- This humiliation gave rise to the spirit of revenge and Germany started looking for an opportunity to do away with the harsh treaty. Hence, the war became inevitable.

Rise of Fascism and Nazism

- The rise of extreme nationalism in Italy and Germany in the form of Fascism and Nazism, respectively contributed to the causes which led to the Second World War.
- Italy wanted to revive the glory of the old Roman Empire and joined Anti-Comintern Pact in 1937 and formed a 10 years alliance with Germany in 1939.
- Mussolini established Dictatorship in Italy and demonstrated nation's imperialistic designs by attacking Abyssinia. Hitler wanted to re-establish the

prestige of Germany. He flouted the military causes of the Treaty of Versailles and declared re-armament in 1936 and started regaining its lost territories on all frontiers.

- In 1938, Hitler annexed Austria and dismembered Czechoslovakia. Thus, both the leaders through their acts, furthered the war.

Policy of Appeasement

- Britain and France followed the Policy of Appeasement i.e., the policy of conciliating an aggressive power at the expense of some other country towards Germany and Italy.
- They decided to accept the hostile demands of the aggressive nations to gain peace. They knew that for both Germany and Italy, the Treaty of Versailles was too harsh and humiliating and if the grievances of Germany were removed, it would not disturb the world peace.
- They also wanted to check the rising tide of Communism and Russian Bolshevism and therefore, allowed Germany to rearm and to re-militarise the Rhineland and capture Austria and Czechoslovakia.
- Due to this policy, Fascism and Nazism survived for long and thus, were able to unleash the Second World War.

Japanese Invasion of China

- Japan's ambitions rose after the First World War and she was determined to dominate the far East. In 1931, Japan invaded Manchuria and occupied it, despite the League's opposition. Japan also started an undeclared war against China in the same year.
- Japan joined the Berlin-Rome axis to form the Berlin-Rome-Tokyo axis to further its policy of expansion and conquest. In 1933, Japan left the League of Nations and started occupying the British and American properties in China.
- Britain and France felt that this appeasement policy could be used to weaken China and thus, started following the same. Thus, a war was inevitable under these circumstances.

Failure of the League of Nations

- The League of Nations was created to prevent future wars. However, the USA did not join the League, which proved to be a blow to the League. Even those,

who joined the League were not interested in the principle of collective security.

- The League succeeded in allaying the threat of war in cases, where the parties involved were small nations, but did nothing when Poland, with the backing of France seized a part of Lithuania in 1920.
- In 1923, Italy refused to submit to the League's intervention and settled the dispute with Greece by direct mediation of Great Britain and France. Thereafter in every crisis, the League was either defied or ignored..
- League's authority was flouted by Japan, when it seized Manchuria in 1931 and by Italy, when it conquered Ethiopia in 1936.
- Countries of Europe lost faith in League's usefulness as it failed to maintain International peace. Therefore, they themselves entered into mutual political and military alliances.

Hitler's Invasion of Poland (Immediate cause)

Germany lost its port city of Danzig, which was given to Poland as a part of the Treaty of Versailles. The city was mainly inhabited by Germans. Poland was accused of committing atrocities against Germans living there.

On 1st September, 1939, the German armies marched into Poland. France and Britain gave an ultimatum to Germany. In reply, Germany attacked France. On 3rd September, Britain and France declared war against Germany. Thus, the invasion of Poland marked the beginning of the Second World War.

Attack on Pearl Harbour and the US Entry into the war

The US President Roosevelt and most Americans were sympathetic towards Britain, but they were opposed to direct US entry into the war. By early 1941 Britain had begun to receive massive supplies of arms and other goods from the United States.

On 7th December, 1941 Japanese bombing of the Pearl Harbor made the US join the war. Japanese naval and Air attack destroyed 188 aircrafts, many battleships and naval vessels of the United States. More than 2000 sailors and soldiers lost their lives. It brought the United States into World War II. On 8th December, 1941 the United States declared war on Japan and other Axis Powers – Germany and Italy. Battle of Berlin made the Germans blocked between the Britain and the Americans on one hand and the Soviets on other. Hitler, after the allied forces closed in on Berlin, committed suicide.

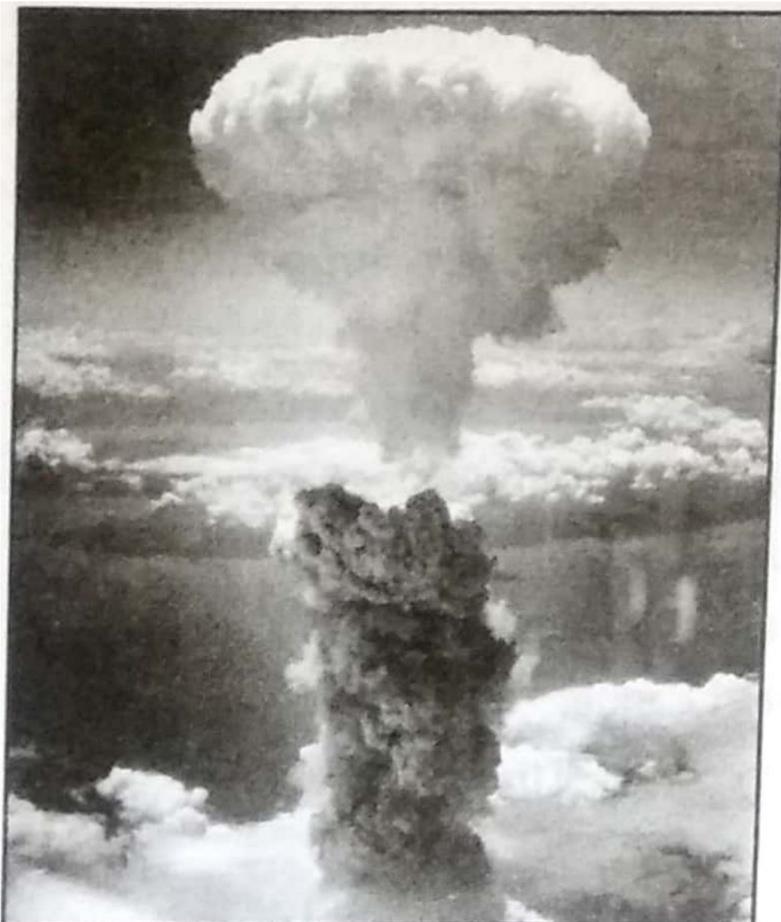
Bombings on Hiroshima and Nagasaki

The Americans started their offensive against Japan to liberate the islands in the South West Pacific. Long before the invasion, scientists were working on the most powerful weapon ever conceived-the 'Atom Bomb'. The first such, bomb was detonated in a desert near New Mexico.

In 1945, days after the first bomb was dropped on Japan, American planes dropped leaflets warning about the weapon and urging the Japanese people and the Government to end the fighting.

On 6th August, 1945, the first atomic bomb ever to be used on humans, was dropped on Hiroshima. Despite the terrible destruction, the Japanese still refused to surrender.

On 9th August 1945, another bomb was dropped on Nagasaki. On 2nd September, 1945, Japan surrendered unconditionally. This marked the end of the Second World War.



Consequences of the Second World War

Death and Devastation on an Unprecedented Scale

- It was the most devastating war in human history. Millions people were killed. VAST AREAS OF Europe and Asia were left ruins. The War created conditions of acute scarcity of food stuff, essential goods and shelter.

Defeat of the Axis Powers

- Upto the middle of 1942, Axis Powers met with remarkable success and captured large territories in Europe, Africa and Asia. However, in November 1942, Allied Forces recaptured African territories lost by France. This was followed by their victory over Italy. Italy made an unconditional surrender and signed an armistice.
- In March 1945, the Allied forces moved across the Rhine and dealt a death-blow to the German forces. Hitler was so disappointed that he committed suicide on 30th April, 1945.
- The Allied Forces, after Germany's defeat, turned their attention towards Japan. Japan had occupied Hong Kong, Philippines, Singapore, Myanmar, parts of new Guinea and Indonesia.
- After bombings on Hiroshima and Nagasaki, Japan offered to surrender on the terms of **Potsdam declaration** on 10th August and the war came to an end. After the war, the Axis Powers had to face the following consequences:
 1. Germany was divided into zones under the army of each of the Allied Powers.
 2. The Federal Republic of Germany (West Germany) was administered by UK, France and the USA.
 3. German Democratic Republic (East Germany) was administered by the Soviet Union.
 4. Japan and Italy also became very weak. American army was to occupy Japan until 1952. All lands acquired by Japan, since 1895 , were taken away.

Formation of the UN

The failure of the League and the horrors of the World Wars led to a meeting of the Big Three – Roosevelt, Churchill and Stalin at Yalta in February 1945. They resolved to convene a conference of the representatives of all the nations at San

Francisco to draw up the Charter of the UN. This led to establishment of the United Nations Organisation on 24th October, 1945.

Rise of Communism

Russia, under Stalin was successful in establishing Communist governments in East European countries- Poland, Hungary, Bulgaria, Romania, Albania, Czechoslovakia.

Cold War

- The term Cold War was first used by Bernard Baruch, an American Statesman.
- Cold War is a state of extreme political unfriendliness between two or more countries, although they do not actually fight each other. In fact, the Cold War was neither a condition of war, nor a condition of peace, it was a state of uneasy peace.
- Though, the USA and the Soviet Union fought together in co-operation during the World War, the apparent harmony between the two declined and old suspicion and ideological differences came to the forefront.
- Both the countries did not engage in actual fights, but there was a state of extreme political tension between the two. This state of tension is known as the Cold War, an atmosphere with no armed struggle, but the prevalence of a cold hostility. All these results divided the world into two blocs.

The Democratic and Capitalist Bloc

It is led by the USA. This bloc believed in Liberal Democracy based on Capitalism. America tried to maintain her influence by giving economic aid to different countries.

The Communist Bloc

It is led by the USSR, and was also called the Eastern Bloc or the Soviet Bloc. It believed in Communism based on Marxist theory. This bloc considered the Western style Democracy as force, meant only for the rich and upper middle class. Thus, the whole Europe got divided into power blocs. These two blocs openly propagated against each other, each from its own view points.

Home Work –

1. Give an account of the causes of the Second World War under the following headings :
 - a) Failure of the League of Nations b) Rise of Fascism in Italy and Nazism in Germany c) Japan's invasion in China.
2. Why did Hitler invade Poland?
3. How was the Treaty of Versailles responsible for the Second World War?
4. With reference to the cause of the Second World War, explain the following
 - A) Unjust Treaty Of Versailles b) America's attack on Hiroshima and Nagasaki. c) Attack on Pearl Harbour.
5. When and why UNO established?
6. How was the world divided into two blocs after the Second World War?
7. What is meant by the term Cold War?
8. Explain any 3 consequences of the Second World War.
9. Who coined the term Cold War?
10. What were the effects of the Second World War on Germany?
11. What were the effects of the Second World War on Japan?
12. Name the two powers which became superpowers soon after the Second World War.

