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Main

This is the main page. We aim to be the ideal hub for Nepali students and teachers to learn and share.

Biology

Biology is the natural science that involves the study of life and living organisms, including their physical structure, chemical composition, function, development and evolution. Modern biology is a vast field, composed of many branches. Wikipedia

There are more content coming to Biology in the future. Please stay tuned.

Old Questions

- Biology, Grade XI - 2069 (2012)

Economic Importance of Fungi

Fungi have both positive ad negative roles in our daily life. So they are our friends as well as foes (enemy).

They are described as below.

Beneficial Roles or Useful Activities

1. Fungi are used as food. e.g. Mushrooms and Morels.
2. Fungi are used in laboratory.
   - Baking Yeast (S. cerevisae)
   - Several alcoholic beverages such as wine, whiskey, beer, rum all are prepared by fermentation activity of sugar solution by wine yeast. (S. ellipsoidens)
   - Some fungi are used in production of enzymes like amylase, pectimase
3. Some fungi are used in production of several antibiotics and antibiotics and other useful medicine like penicillin, streptomycin, ergotine and ephedrine respectively.
4. Several fungi are used in commercial production of different organic products like citric acid, fumaric, lactic and oxalic acid.
5. Fungi in agriculture:
   - Being saprophytes they decompose the organic matter and enhance the fertility of the soil.
   - Some fungi develop symbiotic relation with roots of higher plant like Pinus and help them in absorption of nutrients. Such fungi are known as mycorrhiza.
6. Some fungi are used to produce hormone like Gibberellin.

Harmful Activities:

1. Food spoilage (destruction) caused by fungi like mucor and yeast.
2. Some yeasts causes huge loss in silk industry to attack silk worms and kill the same.
3. Several types of plant diseases caused by (different types of fungi) species of Nematospra they attack tomatoes, cotton and bean plants. Similar disease like causal organisms
   - Stem rust of wheat – Pucvinia graministice
   - Early blight of potato – Alternaria solani
   - Late blight of potato – Phytiphtoria infestans
   - White rust of crucifer – Albugo candida
4. Some fungi (Cryptococcus neoformans) may cause human disease like meningitis and brain tumor. Torula and other yeasts produce small nodules on the skin and lesions in the viscera and bones of man.
5. Some fungi are concerned with destruction of substances like attacks textile materials, paper, leather goods, rubber even optical instruments.
6. Some fungi are not edible mushroom like different species Amanita.

Economic Importance of Bacteria

Bacteria play very important role in the continuous sustenance of life. They are man's best friends as well as enemy. There are many useful as well as harmful bacteria around us. Economic importances of bacteria are studied under two headings they are Beneficial activities and Harmful activities. Beneficial Activities are studied under three headings A) Agricultural Importance i) Dead and decay of organic matter-saprophytic bacteria eg. Clostridium, Staphylo, Coccus, salmonella etc acts upon the organic matter and disintegrates them converting valuable fertilizer. ii) Nitrification:- It is a process of conversion of organic substance into nitrate form which are utilized by green plants easily. Eg Nitrifying bacteria like ammonia salts (nitrosomes and nitrococcus) to nitrites (nitrobacter) – Nitrates

iii) Nitrogen fixation- in the air present 78% of nitrogen, but atmospheric nitrogen cannot be utilized by plants directly. The process of conversion of atmospheric nitrogen into molecular nitrogen by bacteria. Eg Rhizobium, Azobactor, Clostridium is called Nitrogen fixation. iv) Soil fertility- soil bacteria plays important role for the soil fertility. When soil will be fertile, automatically agricultural production will be increased. Eg- Fusarium and other soil bacteria. v) Manure- saprophytic bacteria acts on animal dung, farm refuse and organic wastage of industrial house resulting manure which is the best for agricultural production. vi) Ensilage vii) Gobar Gas Plant

B) Industrial Importance i) Milk is converted into curd by the action lactic acid bacteria. ii) Cheese- Milk first coagulated by chemical reagent and converted into spongy, soft, tasty cheese. iii) Vinegar Production- Mycoderm bacteria converts sugar and sugary substance into acetic acid or vinegar. iv) Alcohol and acetone production. Molases (Sugary substance)--------(fermentation/Clostriduim)---- Acetone + Alcohol v) Curing and ripening of tea and tobacco leaves- when harvested leaves and hung in shed, they will be acted by bacteria micrococcus resulting flavor and tasty. vi) Fibre retting- the intact firbres of jute, hemp, flax,etc are separated by bacterial action. Fibre plant when immersed in water acted by bacteria dissolves pactic substances of middle la,ella and yiekds fibres, which are used for many commercial uses e.g. Making different kinds of ropes bags,shoes etc vii) Leather tanning-bacteria are used to convert skin of animal (hide) into leather. Recently replaced by chemical for tanning.

C) Medicinal importance i) Vitamin B- Riboflavin obtained from clostridium ii) Antibiotics-Different antibiotics are obtained from bacteria's like Thyromicin antibiotic by bacillus brevis bacteria. Subtilin antibiotics obtained by bacillus substises.

Harmful Activities of Bacteria About 90% of human and disease are caused by bacteria 1) Animal Diseasei) Cholera- Vibrio cholera ii) Tuberclosis- Mycobaterium tuberculosis iii) Leprosy- Mycobacterium leprae iv) Typhoid- Bacillus typhosus v) Tetanus- Clostridium tetani vi) Pneumania- Dilplococcus pnemoniae

Plant diseases caused by bacteria i) Citrus Canker- Xanthomonas citri ii) Leaf blight of rice- Xanthomonas oryzae iii) Bacteria blight of bean- Xanthomonas phaseoli 2) Spoilage of food stuff- Sporophytic bacteria acts upon different food stuff resulting unfit for eating. 3) Food poisoning- Some bacteria like Staphylococcus aureus secrets toxic substance due to which food becomes poisonous resulting even death too. 4) Deterioration of Domestic articles- Wooden articles, fibres, leather deteriorate by action of bacteria eg (Spirochaete cytophaga) 5) Denitrification and desulphurification of soil-plants can absorb NO3 and SO¬4 form of nitrogen and sulphur by the process of nitrification and sulphurificarion. But there are some harmful bacteria which convert NO3 and SO4 form of nitrogen and sulphur into NO2 and H2S which are not utilized. Hence, bacteria are our friend as well as enemy.

Introduction To Biology

Why water is important for our life? Water is a major chemical of protoplasm which plays a major role in our life.

What do you mean by carbohydrate? Carbohydrates are the organic compounds of carbon, hydrogen and oxygen, where the hydrogen and oxygen are present in the ration 2:1 as in water.

Give the name of different types of carbohydrates. Carbohydrates are classified into monosaccharides, disaccharides and polysaccharides.

Why are chains of amino acids called peptides? The amino acids are linked together with the help of peptide bonds and the chains of amino acids bonded by such linkages are termed peptides.

What is a peptide bond? A covalent bond between a nitrogen atom and a carbon atom is called peptide bond.

What do you mean by protein? The proteins are polymers of twenty different amino acids.

What are lipids? Lipids are compound of C, H and O but have much less oxygen compared to carbohydrates. They are insoluble in water but readily dissolve in organic solvent such as ether, benzene and chloroform.

What are simple lipids? Simple lipids are esters of fatty acids and various alcohols.

What are compound lipids? Compound lipids contain other groups in addition to fatty acids and alcohol.

What are sterols? Sterols are derived lipids formed of four carbon rings with a attached R group.

In which part of a plant are fats found in large amount? Fats are abundantly found in seeds as reserve food with a large amount of energy stored in them.

What are enzymes? Enzymes are biological catalysts which speed up or catalyze the metabolic reactions in the cells. Chemically all enzymes are proteins.

What are cofactors and coenzymes? The cofactors and coenzymes are substances essential only for the functioning of enzymes. The term coenzyme is used for organic molecules, whereas the term cofactor is used for inorganic ions.

What are nucleic acids? Nucleic acids are long chain macromolecules of nucleotides with high molecular weight. They are composed of a pentose sugar, phosphoric acid and nitrogen bases.

Write the structural difference found between DNA and RNA. Structurally DNA and RNA show two main differences: (a) DNA contains deoxyribose sugar and RNA contains ribose sugar. (b) DNA contains thymine whereas the RNA contains uracil.

Who established the double helix structure of DNA? Double helix structure of DNA was established by Watson and Crick (1953) on the basis of the x-ray diffraction.

What are the important life components? The important life components are basically classified into two types and they are; (a) Organic compounds: Carbohydrates, lipids, proteins and nucleic acids. (b) Inorganic compounds: Water and minerals.

Name the components of nucleotide. Each nucleotide is formed by cross-linking of three substances (a) pentose sugar (Deoxyribose or Ribose sugar) (b) phosphoric acid and (c) nitrogen bases (Purines – adenine and guanine & Pyrimidines – thymine, cytosine and uracil).

Name two DNA containing cell organells. Mitrochondria and Chloroplast are the two DNA containing cell organells.

How do fats yield more energy than starch on oxidation? On oxidation, fats yield more than twice energy as the oxidation of the same weight of starch, as fats have less oxygen.

What type of bonds hold a DNA double helix together? The double helix of DNA is held together by hydrogen bonds between specific pairs of purines and pyrimidines.

What do you mean by nucleotides? A sugar molecule with nitrogenous base and phosphate group forms a nucleotide.

Name the devices used to establish the structure of DNA. The x-ray diffraction was used by Watson and Crick (1953) to establish the structure of DNA.

Why does not oil dissolve in water? Oil is a hydrophobic non-polar group and cannot form hydrogen bond with water and therefore doesn't dissolve in water.

Define cellular pool. The collection of various types of molecules in a cell called cellular pool.

Name three main elements that constitute the major part of the cellular material. Carbon, Hydrogen and Oxygen.

Name small molecules of the cell. Minerals, water, amino acids, sugars, lipids and nucleotides.

Write the name of sugar which is found in the blood plasma of human beings. Glucose.

What will be formed of hydrolysis of lactose sugar? Glucose and glactose.

Name a nitrogen containing polysaccharide. Chitin.

Give two examples of aldose sugars. Glucose and ribose sugar.

Give two examples of ketose sugar. Fructose and ribose sugar.

Which is the most common form of sugar in fruits? Fructose.

Why cannot cellulose be digested by animals and human? Due to lack of cellulose digestive enzyme in our digestive system, the cellulose cannot be digested.

Cell Biology, Conceptual Questions with Answers

What is cell? Cell is the basic structural and functional unit of living organism. It is the smallest unit, that can carry all the process of life.

Who discovered the cell? In 1665 Robert Hooke studied the cell in a thin slice of cork for the first time.

Who gave the cell theory? Schleiden and Schwann gave a cell theory which proposes that the bodies of animals and plants are composed of cells and products of cells.

How cell arise? According to cell theory all cells arise from pre-existing cells.

What is protoplasm? The semi-fluid mass of cytoplasm including nucleus is called protoplasm. Protoplasm with non-living inclusions, excluding cell wall is called protoplast.

What is cytoplasm? The semi-fluid mass of the protoplasm excluding nucleus is called cytoplasm. Cell membrane forms the outer most covering of the cytoplasm, while nucleus forms the internal boundary.

Define nucleus. Nucleus was first discovered by Robert Brown (1831) in an orchid cell. It is a dense protoplasmic body lying embedded in the cytoplasm. It directs and controls all the life activities of a cell.

How a plant cell differ from animal cell? A plant cell differs from an animal cell in having cell wall, plastids a large central vacuole and by the absence of a centriole.

Define centrosome. The chromosomes are defined as the coloured body of nucleus. They contain genes and hence carry the genetic information.

What do you mean by heterochromatin and euchromatin? Each chromosome consists of two distinct regions: (i). Heterochromatin and (ii) Euchoromatin. Heterochromatin is genetically inactive, but it controls the metabolism of the chromosome, biosynthesis of the nucleic acid and the energy metabolism. The euchromatin is genetically active substance. It is rich in DNA and forms the major portion of chromosome.

What do you mean by prokaryotic cell? A prokaryotic cell is relatively simple cell. It has an incipient nucleus, the genetic material is present as circular structure formed of DNA fibres only. It lacks all the membrane bound organells.

Name the longest plant cell. Acetabularia

12. What do you mean by eukaryotic cell?

An eukaryotic cell has a membrane bound nucleus (an organized nucleus). The genetic material is present in the form chromosome. It contains a number of membrane bound organells.

What are cytoplasmic inclusions? As a result of metabolic activities several kinds of non-living substances are produced within the cell, which are called cytoplasmic incusions or ergastic substances.

What is cell division? Cell division is a process in which formation of new cells or increase in number of cells take place by the division of pre-existing cell.

How many methods of cell division are found? In plant and animal, cells divide by three methods: a. Amitosis or direct cell division. b. Mitosis or indirect cell division. c. Meiosis or reductional cell division.

What do you mean by cell cycle? The total changes from one mitosis cell division to another mitosis cell division is called cell cycle.

What is mitosis cell division? Mitosis is the division of the cell in which a single cell divides to form two cells, each having the same number of chromosomes as present in parent cell. It is also called somatic or vegetative cell division.

What is the importance of mitosis cell division? Mitosis cell division is essential for the growth of plant and animal body. It helps to produce genetically identical cells.

What is meiosis cell division? In meiosis cell division, a diploid cell divides to form four haploid cells, each having half the number of chromosomes present in the parent cell. It occurs in reproductive cells at the time of gametes or spores formation.

How many nuclear division are found in meiosis? Meiosis comprises of two nuclear divisions; a. Heterotypic or meiosis first or reductional division, and b. Homotypic or meiosis second or equational division.

What are plasmodesmata? The cell walls discontinued at some places forming pits are called plasmodesmata. They facilitate movement of substances between adjacent cells.

Name the biomolecules responsible for the two principle roles of nucleus. a. DNA carries hereditary information. b. RNA codes for the enzymes to be formed.

What is the function of nuclear pores? Nuclear pores serve as pathways for exchange of macromolecules between nucleus and cytoplasm.

Where are elementary particles located? The outer surface of outer membrane and inner surface of inner membrane or mitochondria contain numerous minute structures called elementary particles or oxysomes.

Enumerate the functions of cytoplasm. a. Intracellular distribution of metabolites within the cell. b. Exchange of material among different organells. c. Provides site for glycolysis.

What are the functions of cytoskeleton? a. Forms structural framework within the cell. b. Maintains the shape of the cell. c. Regulates distribution and orientation of organells.

Why is mitosis an equational division? The mitosis is an equational division because the daughter cells have the same number of chromosomes and equal amount of cytoplasm.

Why is meiosis a reductional division? In meiosis cell division the number of chromosomes become half, therefore it is a reductional division.

What is the region of attachment of chromosome to the spindle fibres called? Centromere.

Define synapsis. The pairing of homologous chromosomes during zygotene substage is called synapsis.

Define crossing over. The exchange of small segment of chromosomes between homologus chromosomes is called crossing over.

English

Old Questions

- Compulsory English, Grade XI, - 2069 (2012)

Purgatory - William Butler Yeats

The old man was born in the ruined house. His mother was an aristocratic woman who fell in love with a his father and married him despite the opposition from her family.

The old man's mother died while giving birth to him. She wasn't alive to see when her husband wasted all her money on alcohol, women and playing cards. It is clear that the old man's father destroyed the spirit of the house by doing wrong things.

The old man wasn't sent to school but was taught by a priest and by the wife of a servant. The old man, on being complained by his son that he had not sent him to school, he told him that he didn't deserve to go to school because he was the son of an unmarried, low class woman. This shows us that the old man prides of his mother's heritage.

When the old man was sixteen years old, his father burnt down the house when he was drunk. Therefore, he stabbed his father to death with a knife which he kept using for cutting food. He was not arrested for the crime because it was impossible to prove that his father's body had been stabbed to death as it was burnt very badly. After the murder, he ran away from the house and became a peddler.

It was his mother's wedding anniversary and he saw his father riding home with a wine bottle under his arm. The old man heard the hoof beats of horse and a young lady appearing in the window. However, the boy says nothing and he was indifferent about the old man's saying because he was tending to snatch away the bag containing money from the old man. The son threatened to kill the old man as he had not been given the due share of his property. The old man then killed his son with the same knife which he had used for killing his father. He believed to have broken a cycle of violence by stopping his son from murdering him. He thought that by killing his son, he had prevented to add more sin at his mother's share. He believed that now his mother's soul would be free from purgatory. However, he heard the hoof beats (walking sound of horse) of horse again which was an indication that the two murders of his father and his son did not render any help to get his mother's soul free from purgatory. He thought that his mother committed mistake on herself which was not pardonable. He, therefore, cried out to god asking him to release his mother's soul from purgatory.

In the short drama Purgatory, the writer WB Yeats expresses the following things:

- The crime of the father will be repeated by his son to an endless cycle of violence.
- Living beings can render help to the departed soul which suffers in purgatory.
- The living beings have to suffer the consequences of the sin committed by the dead while alive.

What is the theme of purgatory?

Purgatory is a story of remorseful of a departed soul that committed mistakes on itself while being alive. In order to purify itself, it is undergoing suffering in purgatory. It is also concerned with the living beings who suffer the consequences of the sin committed by the dead people while alive and the help rendered by the living beings to get the soul released from purgatory.

What is the motive (aim) in murdering his son by the old man? The old man believes that by murdering his son, he has stopped the boy to have a son of his own who would kill him after attaining 16 years of age, thereby breaking the endless cycle of violence. He also believes that by killing his son, he helps his mother's soul to get released from purgatory.

Heritage of Words

The eBook contains summaries and important questions with answer from,

- Grandmother, Ray Young Bear
- About Love, Anton Chekhov
- The Lamentation of the Old Pensioner, W.B. Yeats
- Two Long-Term Problems: Too Many People, Too Few Trees, Moti Nissani
- Full Fathom Five Thy Father Lies, W. Shakespere
- Hurried trip to avoid a Bad Star, M. Lilla and C. Bishop Berry
- Travelling Through the Dark, William Stafford
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- God's Grandeur, Gerard Manley Hopkins
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- Women's Business, Ilene Kantrov
- The Children Who Wait, Marsha Traugot
- A Child Is Born, Germaine Greer
- The Tell-Tale Heart, Edgar Allan Poe
- Purgatory, William Butler Yeats
- The Boarding House, James Joyce
- Hansel and Gretel, Grimm Brothers, Jack Zipes

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The Poplar Field - William Cowper

William Cowper in his poem "The Poplar Field" shows us the link between human happiness with nature and appeals us to preserve it in order to keep ourselves happy.

The poplars which grew along the river Ouse have now been chopped down. The cooling shade the trees, the whistling sound made by the air while passing through the leaves and the image of poplars in the river Ouse are no longer there. Twelve years ago, when the poet first visited the place, he enjoyed the melodious songs of the black bird sitting under the cold shade of poplar. The poet is very sad now because he isn't being able to hear the sweet songs of black buried anymore as the bird has flown away in search of shelter.

The trees which used to be on the river bank making the entire area beautiful that lent the poet their cool shade once, are now lying low on the ground. The poet feels that his days of life are passing away hurriedly. The poet thinks that he will die soon and his body will be buried under the soil but the poet is very sad that he would not be able to see growing up other trees in place of the chopped down poplars before his death. Seeing the destruction of poplars that represent entire nature, the poet realizes the link of nature with human happiness as he was very happy when the poplars were there and he is very sad now in their absence. Although human live is very short, the poet finds human happiness and enjoyments have much shorter life which die much before our death.

"T is a sight to engage me if anything can", what is the sight? How does the sight engage the poet?

The sight is of the chopped down poplars which makes the poet think seriously.

On revisiting the place were beautiful poplars were there twelve years ago, the poet finds that poplars are lying on the ground as they have indiscriminately been chopped down. In the absence of the poplars, the place looks bare having no charm at all which makes the poet feel very sad. He thinks that he himself has to die very soon as his days are passing away hurriedly. However, the poet laments in nostalgic tone that it is impossible for him to see other rows of trees there in place of chopped down poplars making the area look beautiful again before his death. Although, human life is very short, the poet finds human happiness has much shorter life than human beings. As happiness is linked with nature, the poet appeals us to protect the nature for the sake of our own happiness.

Consider the poem as a defense of nature conservation.

In the poem 'the poplar field', the poet powerfully presents the threatening to our environment from all around and suggests the need to conserve it for the sake of the earth and its inhabitants. The poet appreciates the pristine wilderness, rural beauty and expresses his severe grief on their destruction because of unwise human activities.

The poet, through this poem inspires us to be sincere and devote ourselves to protect it. If we keep our unwise act of chopping down trees indiscriminately, the entire environment will be affected badly by it jeopardizing the life on the planet. Besides calamities like landslide, soil erosion, flood, drought, green house effect and desertification, the lives of human beings as well as birds and animals will be jeopardized. Birds and animals will escape away to other places in search of shelters, river banks will be destroyed making the areas prone of flood and enhancing the risk of water pollution. Showing the link between human happiness with the nature and the consequences of unwise activities, the poet appeals us to conserve the nature for the sake of our own happiness.

Magic of Words

- Summaries

One Sentence Summaries

My heart leaps up when I behold The poem "My hear Leaps up When I Behold" is about the joy the poet feels at the sight of a rainbow which has been source of his ecstasy since his childhood and will continue to be so till his old age.

Speaking of Children One child is an appendage and the parents can have privacy and proper guidance of the child where as the plural children is the end of privacy and the beginning of the obligations.

Look at a Teacup The writer who has decided to remain unmarried fearing disintegration, inherits chinacups from her mother which were bought in 1939 and they have the pictures of falling flowers, which are significant and symbolical.

A Worn Path "A worn path" is the story of an old Negro woman, Phoenix Jackson, who undertakes a long hazardous journey up to the town to fetch medicine for her grandson suffering from throat infection.

The Poplar Field The poem "The Poplar Field" is the lamentation of the poet over the destruction of the poplar field that once provided shade, whispering sound, cool wind and melody of birds.

The Nightmare Life Without Fuel The essay "The Nightmare Life Without Fuel" is a hypothetical situation in America during the late 1990s when dwindling fuel resources have pushed the developed nation towards the pre industrial state of 1800s.

Unchopping a Tree However hard we try and succeed in unchopping a tree by using tackle and scaffholding, it will not be as strongly held as it used to be before chopping the tree and restoring things to their former state is literally impossible.

Keeping Things Whole In spite of the face that the presence of one thing in the absence of other is an unavoidable situation, the poet is determined to move for keeping things whole.

Concrete Cat The poem "Concrete Cat", being an example of a concrete poem presents the word picture of a striped cat with raised tail, upside-down mouse by rear feet and whisker around the mouth showing its catness in action.

The Gardener "The Gardener" is the story dealing with the dual relationship between Helen Turell and Michael Turell as aunt and nephew on the one hand and on the other hand the unmarried mother and illegitimate son who gets killed in the battlefield.

On the Vanity of Earthly Greatness Through the poem "On the Vanity of Earthly Greatness", the poem announces his outlook by saying that all the things of earthly grandeur and power will be reduced in the end into things of non entity.

Malini Being the story of love and hatred, the poetic play “Malini” presents the character Malini, the embodiment of love who wins the hears of people demanding for her banishment in contrast to other character Kemankar, the conservative man of hatred who rewards his well-wisher Supriya with death.

Oops! How’s that again The essay “Oops! How’s That Again” gives a humourous account of tongue slips, spoonerisms and mistranslation with psychological explanations for such mistakes and the reason for our laughter to hear them.

The Six Million Dollar Man The essay “The Six Million Dollar Man” is an interesting and scientific evaluation of each human being as infinitely precious and priceless although the dry weight of the human body costs 245.54 dollars a gram and six million dollars for the person having 24,436 grams of dry weight.

Hurried trip to avoid a Bad star - M. Lilla and C. Bishop Barry

American geographers M. Lilla and C. Bishop Barry in their essay Hurried trip to avoid a Bad Star present an exploration of Karnali zone of western Nepal on foot for 15 months. This essay was published as a visit report in The National Geographic as Karnali, The road less World of Western Nepal in 1971. The writers in this essay describe the life account of Karnali zone people, their daily life, their tradition and culture, their lack of awareness about environmental preservation and Karnali zone’s economic dependency with the plain region of south Nepal.

With a view to study above mentioned aspects, the writers move to plain of south Nepal with the peasants (farmers) who were going towards Nepalgunj for their daily provisions. They were carrying medicinal herbs, hand knitted sweaters and blankets etc. to sell in Nepalgunj.

While climbing step hill near Hari Lekh a Chhetri women of about 36 requested them to send her husband back home who left the house 15 years ago in search of job in the Terai. This request revealed the concept of Karnali zone people about parameter of the world. This may present some resemblance to a proverb popular among the Nepali people; something about a frog in a pond.

In a Sal forest slope the writers noticed the chopping down trees from several direction which indicated the possibility of rapid deforestation in the region. On inquiry, the people explained their compulsion to chop down the trees to feed their animals which exposed their lack of education and ignorance about the importance of preservation of environment. The writers noticed a group of 8 or 9 men in a forest processing Silajit in order to sell in Nepalgunj.These superstitious people, with whom the writers shared the trip, made a hurried trip from their home valley to avoid some kind of 'evil influence' of bad star.

On arrival in Nepalgunj the writers watched the hill people buying their daily provisions; one of them spent all his money buying distillery equipment with a hope to earn money by selling homemade alcohol.

The writers finally concluded their journey at Jumla. They expressed their concern on lack of awareness on Karnali zone people about protection of nature and about the need of educating people regarding this vital aspect. They also expressed that Karnali zone people were living in very difficult place with a very low agricultural production and also suggested them to involve themselves in trade with the Terai region in order to make their life easy with satisfactory earning.

Give a short account of life of Karnali zone people. Two American geographers have depicted (painted) and described the state and lifestyle of Karnali zone. The life of Karnali zone people is extremely hard because Karnali zone is a remote, not well connected with other parts of the country by road and economically backward.

Due to the lack of education the people of that region are very superstitious and believe that a bad star may have evil influence on them and try to avoid it. They are lacking the awareness about the need of preservation of nature. By speeding of the deforestation they are putting their own life’s inside a bottle of great risk because the entire slopes became bare and prone (possible) of landslide and soil erosion.

Although the people of this region are living in harmony with nature in very difficult location with very bad weather, they are not ready to leave their place. The writers found that a hill place is very optimistic and cheerful despite hardship in life with low harvest.

Many of the people in Karnali zone are involved in business. They carry their local products including Silajit to sell in Nepalgunj whenever they go down to the Terai. When they return home they bring necessary goods like aluminum and iron wares, cotton clothes, jewelry items and spices to sell in their locality to earn a living.

Altogether, the life for the native of Karnali is very difficult only when compared to the life in any other developed region of Nepal. But, when one spends much time and finally blends in with the day to day life of that place, it starts to look more natural way to live. The lost but not forgotten hope of that chettri woman can be taken as an inspiration to put up with emotional hardship of loosing any possible hope in their dreams.

Hansel and Gretel - Grimm Brothers and Others

A poor woodcutter used to live with his second wife and two children called Hansel and Gretel. Once, when the country was in famine father was really in trouble to maintain the family. But his wife was not worried even a little about the children. She rather insisted her husband to desert them into the dense forest. The woodcutter did not like the idea but he had to accept his wife’s proposal. The children overheard their parents and Hansel collected jacket full of shiny pebbles. The next morning, he dropped the pebbles on the way while going to the forest. When they reached the middle of the forest, the parents collected firewood, kindled fire and left the children promising to return soon with firewood. The children soon fell asleep. When they woke up, it was already dark. Gretel began to cry and Hansel consoled her. As the moon shone in the sky, they saw the pebbles shining brightly. Following the trail of pebbles they finally reached their home.

After a few months, the country was again affected by famine and the children overheard their parents’ plan to leave them in the forest again. As the door was bolted from outside, Hansel couldn’t go outside to get pebbles this time. In the morning, when they were taken to the forest he scrambled the bread and dropped the pieces on the way. The parents left them in the forest promising them to come back soon. When the children woke in the evening, they couldn’t find the pieces of bread as they had been eaten away by birds. They were lost in the forest. They wandered for three days trying to find out the way to come out of the forest. After some hours of searching they came to a little house made of sugar and bread in the middle of the forest where a witch used to live. When the hungry children started eating the door and window of the house, the witch took them in and offered them food and rest. The witch wanted Hansel to become fat so that she could eat his meat. Even elapsing four weeks, when Hansel didn’t become fat, she decided to eat him. When she asked Gretel to check the readiness of the

oven, Gretel requested her to demonstrate how to check it. When the witch entered into the oven, Gretel pushed the witch and locked her from outside. When the witch died, Gretel freed Hansel and they escaped away after collecting the jewels from the witch's room. Finally, when they came back home, they found that their step mother had already been dead. So they lived happily with their father.

Psychological analysis of Hansel and Gretel The writer in his adapted story Hansel and Gretel presents the psychological analysis of the story. In this story, he expresses a unique truth of life that poverty and deprivation make human beings selfish and less sensitive to others sufferings. The writer tells us that when the children grow up, they must learn to live separately from their parents. Hansel and Gretel have left in the forest in order to give them a chance to learn to live independently. However, they have come back as they have not been able enough to live apart from their parents. The children have again been left in the forest for the second time and they've tried to solve the problem by concentrating on fool only. As they've acted like hungry animals rather than human beings, they have been the captive of witch. The house and the old witch being the source of food are symbolized as mother. This story gives us message that greed leads to destruction. Hansel and Gretel manages to get rid of the witch when they start thinking and behaving like human beings. The white duck that helps Hansel and Gretel get home carrying across the water stretch is the symbol of new beginning. The duck can carry only one child at one time shows that children must learn to live independently without any support from their brothers and sisters. The bird which led them to the gingerbread house is a symbol of peace. When Hansel and Gretel return home, they have grown up and start helping their father. The help they render is symbolized by the jewels. The family is considered rich and happy not because of the wealth but because Hansel and Gretel have learnt to think and act like matured people.

Political analysis of Hansel and Gretel This story Hansel and Gretel written by Jack Zipes from political point of view tells us about the struggle between the poor and rich group of people. The woodcutter and his family represent the poor class people who are forced to commit deeds because of their poverty. The witch represents the aristocratic class of people and also symbolizes as the entire feudal system. She is also symbolized as the greed brutality of the aristocracy which is responsible for the difficult condition of the poorer class of people. The killing of the witch is symbolical realization of the hatred felt by the poor people because of the oppression and exploitation on them by the aristocratic people. The writer depicts the class conflict and exposes the prejudice and injustice of feudal ideology. The writer emphasizes that the poor people must be optimistic and should react appropriately against the oppressors for the transition of the situation in their favor.

Gretel's version This story Gretel is presented as Gretel's version in modern setting. Gretel complains that Hansel and her father didn't tell her the true version of the story. She says that Hansel was really very weak and she had to help him. His father was an unpleasant person who was compelled to leave the children in the forest. He bowed down on the insistence of his wife in the evil plan. Gretel says that leaving children in the forest was not unusual. Many parents did so in the past because they believed that animals, fairies, people on pilgrimage or kindly shepherd would take care of them. Gretel says that she has sympathy for her step mother as well for the witch rather than having feeling of disgust towards them.

The Boarding House - James Joyce

James Joyce in the story The Boarding House recollects his own days of youth in Dublin by drawing the characters of Mr. Doran and Mrs. Mooney. Mrs. Mooney was a butcher's daughter who married to the foreman of his father's meat shop. After the death of her father, her husband started drinking alcohol and spending monkey from the shop. He started quarrelling with Mrs. Mooney in the presence of customers and soon ruined the business by selling bad meat. Once her husband chased her with large knife in order to kill her and she had to protect herself by hiding in neighbours house. After that incident, Mrs. Mooney left her husband, sold the meat shop and started a boarding house.

Most of the people staying in her boarding house were the workers from the city. Mr. Doran, an employee of an office used to live in the same house. Mrs. Mooney had a 19 years old daughter called Polly Mooney who helped her mother in doing the household work and running the boarding house. Mr. Doran was having a love affair with Polly Mooney. Mrs. Mooney was aware about the love affair but she kept pretending to be unknown about the affair, there by allowing them to proceed ahead in their affair Mrs. Mooney actually wanted Mr. Doran to marry her daughter. Finally, Mrs. Mooney asked about the affair to her daughter and Polly Mooney revealed everything about their love affair to her mother. Mrs. Mooney was happy but the love affair as Mr. Doran would have to marry her. If he didn't agree to marry her, he would probably lose his job as the love affair was known to everyone in the city. Analyzing all the aspects of the situation, Mrs. Mooney called Mr. Doran in order to convince him to marry her daughter. Although, he was reluctant to marry miss Polly Mooney because of her education and family background. He was under pressure to accept the proposal because of the prevailing situation as the affair was already known to everybody. When Mrs. Mooney was trying to persuade Mr. Doran, Ms. Polly Mooney was making a future plan of life with Mr. Doran being very happy.

The Gardener - Rudyard Kipling

"The Gardener" is the story to be read in between lines. It was written by Rudyard Kipling. It well-written story with such a great craftsmanship and surprise ending that the readers find it necessary to go through the second reading and make readjustment in the relation between one and the other character. In other words, the end of the story acts as a switchback to the beginning of the story for the re-reading.

The story deals with the life of Michael who is said to have been the child of unmarried couple George Turell, an inspector of Indian police and the daughter of a retired non-commissioned officer. It is said that George Turell died of a fall from a horse in India a few weeks before Michael was born. After that, as admitted by George's sister Miss Helen Turell, who had been to south of France for her lung trouble took the charge of the child. The baby was brought to her hometown from India. Later she took the whole responsibility on her shoulders by cutting all the connection with the mother and the non-commissioned officer. These were the details known to all including the public for Helen was quite frank. According to her, scandals would only increase if one tried to hush them up. She vowed that the boy resembled his father George all over. She also explained to the public that the boy could call her 'Mummy' if it delighted him. Michael was provoked to see the things made public and declared that he would die soon. However they were instantly reconciled with tears as their attachment was not skin-deep.

Although he was disturbed to know that his status was not regular due to his birth, he recovered the balance. He decided not to talk of it with Helen any more for it would make her cry. Later the war began and he was directly enlisted in the army, which was a great shock to Helen. In the battle-field while writhing a letter to Helen, he was killed by a Shell-Splinter and his body lay covered by a barn wall that was laid down by another shell. With his death, her world stood still having no concern to her. Later she got an official intimation about Michael's body being found, identified and re-interred in Hagenzeele third Military cemetery. She set for the cemetery. On the way a stolid, plain-featured English woman volunteered to come with her. The woman, Mrs. Scarsforth, was visiting the place for the ninth time. She would visit many graves which were commissions. Yet she confessed to Helen that she had come there to visit a particular grave. After that Helen looked for the tomb of Michael. A gardener came to help for while looking at her with infinite compassion. To the surprise of the readers, he told her that he would

show her where her son was lying. The mysterious presence of the gardener in the graveyard reminds readers of Jesus Christ and makes them feel that it was him. His words induce the readers for the second reading and help them find out that a great deal of information about Michael was supplied by Helen, for which there was no evidence. Her so-called visit to France, death of her brother with a son being born in India, her deep attachment with Michael and above all, her attempts to over-expose their relation throw the light on the hidden aspect of the story. In the end, readers find Helen emerging as another Madonna, the mother of Jesus Christ.

On The vanity of earthly greatness - Arthur Guiterman

"On the Vanity of Earthly Greatness" is a modern poem written by an American poet Arthur Guiterman. It is a flawless poem, which shows the remorselessness of time and the vanity of human greatness.

Through this poem, the poet announces his philosophy of life or outlook that all those entities that symbolize earthly grandeur, greatness and power such as the tusks of mastodons, the sword of Charlemagne the Just, the grizzly bear, great Caesar etc. will be reduced in course of time into things of non-entity.

The presentation of subject matter is quite ironical. Without using the negative words, the poet turns the things of earthly greatness into mere showpiece and nothingness. Each sentence is well balanced with splendid things in place of subject being linked up with worthless objects at the other end. Each sentence of the poem brings out the image of a balance, with a grand figure on the side and cipher on the other side. The irony is obvious when the readers notice the tusks transformed into billiard balls, the sword of Charlemagne into rust, the grizzly bear into rug etc.

One can trace out the sign of vanity in the last couple where the poet admits that he doesn't feel so well himself in the presence of Great Caesar's bust on the shelf. This implies that even the poet is not an exception because to some extent he also seems to suffer from vanity complex of greatness.

The Six Million Dollar Man - Harold J. Morowitz

Harold J Morowitz in his essay "The Six Million Dollar Man" examines the value of chemicals present in human body and arrives at a conclusion that human body is indeed invaluable.

Once the writer received a birthday greetings card where it was written that the material value of human body was worth only 97 cents. Being a scientist himself, the writer becomes curious and decided to examine the statement with the help of catalogues given to him by biochemical companies. He calculated various human body chemicals ranging from three dollars to 17 crore 50 lakh dollar per gram and discovered that the average value of human body chemical was $245.54 per gram. Further calculation brought the value of human body chemicals over six million dollar. On discovering this fact that he was a six million dollar man, the writer felt a great up graduation in his ego. Being a scientist, the writer calculated the human body chemicals in the highest informational and purified form whereas in the 97 cents figure printed on the birthday card, the calculation was done in the poorest informational state and for unpurified block of chemicals only.

We may procure the human body chemicals required to form a human body from bio-chemist lab. It is impossible to assemble the body chemicals into a complete human form. The collection of body chemicals can not be equalized with human being as it can not act and feel like human beings. After detailed analysis, finally the writer comes to the conclusion that human body is readily invaluable and it is improper to compare human beings in terms of money.

Malini - Rabindranath Tagore

Rabindranath Tagore in his poetic play "Malini" presents a story of love and hatred. The play deals with a conflict between love and hatred as well as selfish way of thinking and broadmindedness. It is based on the concept that love in its absolute and pure form is all radiance, all pervading, and all compassionate. The play also shows that petty selfishness assumes the name of love and rules the world with hatred.

Malini, the princess of a Hindu kingdom had her education with Buddhist monks and started preaching their principles in the kingdom. Because of her preaching of new religion, the majority of Hindu Brahmins was agitated and started demanding Malini's banishment from the place. Realizing the suffering of the people, Malini herself wanted to be banished from the palace in order to solve their problems. A group of Brahmins led by Kemankar started demanding Malini's banishment appearing in front of the palace. Supriya, a member of the group and the best friend of Kemankar didn't agree with the view of the group and accused them of trying to determine the truth by numbers. Because of fear of rebellion as the army was openly in their side, the Brahmins started praying the goddess to take human from to help them. In the meanwhile, Malini appeared there and the Brahmins believed that the goddess granted their prayer and took human form. Malini spoke to them with divine confidence and persuaded them that she wanted to help them. The Brahmins were impressed by her love and personality and restored her back to the palace. Realizing the threat to his religion, Kemankar decided to go abroad to bring soldiers and to uproot the new creed (religion) from the kingdom. He asked his friend Supriya to him informed about the situation. But Supriya betrayed his friend Kemankar by handing over his letter to the king to gain Malini's confidence. With the help of the letter that revealed Kemankar's plan, the king arrested Kemankar. The king offered Supriya reward but he politely rejected it and requested the king not to kill Kemankar. On being asked about his last wish, Kemankar desired to see his friend Supriya. Kemankar argued that the only way to solve their argument was to die together at which Supriya agreed. Kemankar then killed Supriya by striking him with the chain. The king stood up with and sword to kill Kemankar but Malini requested the king to forgive him.

Criticism of Malini Tagore, the unparallel champion in the South Asian literature fascinates the attention of the readers towards 'politics'. Honestly, politics is not ruled by the good will of the people but it is driven with conspiracy. Through the religion, the writer dramatizes so called politics.

The extra ordinary character 'Malini' not only haunts her own tradition by accepting the voice of the people but also explodes modernity, freedom and civilization. The real meaning of democracy can not be interpreted by the palace but it can be redefined by the people. Therefore it is said that the voice of the people is the voice of het god.

The overall plot of this play is simple and wonderful because the writer has applied his unique treatment which is also quite popular in the south Asian politics.

The writer has invited successful, dedicated and determined characters to dramatize his mission one of the prominent character is Kemankar, who not only plays or holds the leading responsibility but also gives the lesson of transformation. Being the antagonist, he plays the role of protagonist by winning the heart of the people and the princess Malini. He has consistency and dedication for the road map he has drawn for the kingdom. He is the peculiar politician who wants to destroy the palace. For this he goes to the foreign land to collect armies with weapons. He knows that his own armies aren't sufficient enough for transformation. Unfortunately, he gets betrayed by his own friend Supriya.

Critically, Kemankar is the dashing figure, welcomed by the writer in the play 'Malini'. His heart is so marvelous that doesn't get melted with the provinces or the face of the beautiful lady. The real son of the state doesn't forget his responsibility. That's the reason why Kemankar supposes to change the traditional appearance of the kingdom. A very careful reader of literature and politics may discover the spectrum of personalities by the dialogue of Kemankar. He is peculiar, courageous and the multi dimensional rebel. According to Malini, the iron chain doesn't shut his personality. Anyway, he proved to be the protagonist although he gives death penalty to his friend Supriya.

In a nut-shell, Rabindra Nath Tagore, an outstanding Bengali writer, successively photographs benevolence and malevolence by dramatizing so called politics. As a lamp has the shadow, similarly, love is equally potential to reflect hatred. So far as the modern politics is concerned, it is not defined by the Monarchy but is interpreted by the people.

Draw the character sketch of Malini. Malini is the principal character in the poetic play 'Malini'. She is a simple, innocent, beautiful, confident and young princess of a Hindu kingdom. She has her education with Buddist monks and starts preaching their principles in the kingdom. She neither cares the wealth or the comfort of the palace. She is devoted for the cause of humanity as she realizes the suffering of the people and wants to serve them, she has a broad heart and is ready to forgive even Kemankar who has plotted her banishment plan. She understands it clearly that Brahmins are demanding her banishment because of her creed as they think that her creed is a great threat to their religion. She herself is desirous to be banished so that she could solve the problems of people outside the palace. When she comes to the Brahmins, she speaks to them with divine confidence and persuades them that she actually intends to help them. The agitating mass is so impressed by her personality, simplicity and her words that they consider her as little goddess and restore her back to the palace. She requests the king to pardon Kemankar as she considers that it is better to win (conquer) a person by love rather than by punishing him.

Draw a character sketch of Supriya and show how he is different from Kemankar. Supriya is one of the Brahmins who are demanding Malini's banishment. Both Kemankar and Supriya consider that Malini's creed posses a great threat to their religion. However, from the very beginning, Supriya opposes the banishment plan of an innocent girl. He doesn't believe that the number of people can determine the truth. He feels shame to own a religion that depends on force of its existence. After meeting with Malini, Supriya declares that traditional religious books are not being able to give him true knowledge and consolation as he is impressed by Malini's words and her personality. Therefore, in order to get her confidence, he betrays his best friend Kemankar and tells the king about Kemankar's plan.

Supriya is different from Kemankar although they are smuch closed friends from their childhood. Kemankar is very firm in his belief and has unchanging determination whereas Supriya has got a changing mind and is always doubtful. Feeling the danger on his religion, when Kemankar goes to foreign land, Supriya promises to wait in the kingdom and keep informing him about the situation. However, in order to get Malini's confidence, he betrays his best friend by handing over the letter to the king. However, Supriya regrets his act when Kemankar is arrested by the king.

Draw a character sketch of Kemankar. Kemankar, the antagonist character in the poetic play 'Malini' is portrayed as an extremely orthodox Brahmin and religiously very obstinate one. He is a deeply devoted Hindu Brahmin who supports Hinduism very blindly. When Malini is taught by Buddhist monks and adopted Buddhism, Kemankar thinks that Malini stands against Hinduism which is a great threat to his religion. Because Malini's new creed, Brahmins are agitated under Kemankar's leadership demanding Malini's banishment from the palace as well as the kingdom. When Malini appears before the Brahmins and talks to them with divine confidence, the agitating Brahmins are convinced that Malini is not against their religion but she intends to help them. So they restore her back at the royal palace. When all the Brahmins are impressed by her impressive words including his close friend Supriya, Kemankar decides to go to foreign country in order to bring foreign soldiers to uproot Buddhism from the kingdom and banish Malini. However, he is arrested because of Supriya's betrayal as he handed over the letter written by Kemankar having detailed plans to attack the kingdom to the king. When the king is about to kill Kemankar for his treachery to his own motherland, Malini requests the king to forgive him.

Would you call Supriya a betrayer? Give reasons in support of your answer. In the poet play 'Malini', Supriya can be called a betrayer. In his entire life, Supriya follows Kemankar. He regards Kemankar as his best friend, guide and teacher. When Kemankar intends to go to foreign country to bring soldiers to banish Malini and to uproot the new creed, he asked Supriya to remain there in the kingdom to inform him about the situation. Supriya promises to act according to Kemankar's wish. Kemankar also wants Supriya not to be impressed by any kind of novelty (newness), falsehood and he should not ignore his promise. Kemankar wrote a letter to Supriya giving details about his plan for uprooting the new creed. However, because of his own ethics, Supriya reveals Kemankar's plan to the king by handing over his letter. The king arrested Kemankar with the help of the letter. This way Supriya deviates from his own promise and betrays his friend. Since he betrays his friend, he can be called a betrayer.

Oops! What's That Again - Roger Rosenblatt

Roger Rosenblatt in his essay "Oops! What's that Again" classifies the mistakes people make while speaking in humourous tone with remarkable examples. He also describes the reasons of these mistakes from linguistic and psychological point of view.

Broadly, the writer classifies verbal mistakes into four categories as under:

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Slip of tongue: This type of mistake is very common. In such mistake, the speaker tell one thing when he means to say another
Faux pas: This type of mistake usually occurs when a person says something that he thinks harmless. But is actually has a mean
Mistranslation: This type of mistake is made when the text of a language is badly translated into another language.
Spoonerism: This kind of mistake is made when a person mixes up the initial letters of the words he is speaking.
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Quoting the mistakes because slip of tongue, the writer mentions that in a Royal Luncheon is Glasgow; a businessman wished Prince Charles a long and happy conjugal life with Lady Jane instead of Lady Diana. In Chicago, the governor of Illinois was introduced as mayor of Illinois and again as governor of America. While giving the examples of faux pas the writer mentions that once Nancy Regon describes the voters as 'the beautiful white people' ignoring the black people

present there which put her in very difficult situation. The French prime minister while condemning a bomb attack once said that the bomb was aimed at Jews but it struck the innocent Frenchmen. It meant that the Jews in France weren't Frenchmen and they weren't innocent either. Mistranslation is also the cause of verbal error. Pepsi's advertisement "Come alive with Pepsi" was mistranslated into German language as "Come alive out of the grave with Pepsi". German prime minister once asked Indian president "Who are you?" instead of "How are you?" while receiving him at the airport.

Spoonerism began with William Archibald Spooner when he chided his students as "You hissed all my mystery lecture, you've tasted the whole worm.....drain". He meant to say as, "You've missed all my history lectures, you've wasted the whole term...down train".

Although these mistakes are funny to us, linguists and psychologists take these mistakes seriously. Victoria Fromkin, a linguist calls the mistakes clues to how the brain stores and articulates language. Other linguists suggest that the mistake expresses the misspeaker's inner thought. Psychologist Ludwig says the verbal mistake occurs because of human id, ego and super ego.

Verbal mistakes always tell us about the logic and possibility behind them. We always laugh when people make mistakes. Sometimes, we find mistakes funny because of being mean. But sometimes we laugh at verbal mistake because we feel sympathy as we all make mistakes.

Keeping Things Whole - Mark Strand

Mark Strand in his poem "Keeping things Whole" expresses that human beings always disturb the nature whereas nature always makes a balance to keep itself intact. The poet appeals for wholeness of nature against its usual fragmentation while performing daily activities in our life.

The poet says that while in the field, he considers himself as absence of the field; this is because the field is missing where he is standing. Wherever he is in the field, he displaces and occupies the part of the field that is missing (not visible). According to the poet, he divides the air when he walks. In other words, he disturbs the nature. When he moves forward, the air comes from different directions to cover up the vacant space. In order to fulfill the desire, human beings always damage and disturb the nature. However, the nature always makes a balance by repairing itself. The poet tells us that while performing various activities in life, we should be very careful and should not disturb the nature rather we should support the wholeness of it. The poet says that people may have different reasons of moving, but the poet keeps moving to enable the nature to repair it by itself as he wants to keep the nature whole.

The Nightmare Life Without Fuel - Isaac Asimov

Isaac Asimov in his essay 'The Nightmare Life Without Fuel' depicts the horrible state of the world after the fuel is finished from the world. Showing the case of prosperous America which turns into a dark state of pre-industrial age because of fuel crisis, the writer draws our attention towards the vital need of preservation of fuel to avoid future crisis.

The writer assumes twenty years advance in time when the fuel is finished from the world. Because of fuel crisis, no vehicles are plying on the road making it very difficult for people to transport goods and to move to their destination. Being dangerous, nuclear fusion and fission to generate electricity is not being materialized. Being too expensive, solar batteries and other sources of energy are not being used. Although, there is difficulty everywhere because of fuel crisis, it has the following advantages:

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There will no smoke from vehicles and industries so the air will be pollution free.
Less people will suffer from cough and cold because of pollution free air.
Crime rate will fall down because of mutual protection in crowd.
Due to lack of other entertainment facilities, people will start utilizing natural source of entertainment.
People will learn to live natural life without facilities such as central heating, shower bath with hot water etc.
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The following will be the disadvantages of fuel crisis:

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People will be deprived from facilities which will make their life complicated.
People will have to walk and carry goods by themselves.
People living in suburbs will face acute problem bringing and storing food.
High percentage of people will have health problems, even sustain brain damage
Entertainment and printing materials will be curtailed depriving people from getting even information and news.
There will be high death rate of infants as their mothers will go dry.
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Outside America and Europe, only 20% people are being able to feed themselves. People are dying because of starvation and a large number of people are suffering from brain damage. According to report, such unhealthy people are being killed secretly to save food. There is a high death rate of infants because their mothers have gone dry due to lack of nutritious food. Armies have been almost disappeared from the world except few countries like America and Russia.

Finally, the writer laments not being aware and taking steps to save fuel in the past. He expresses if we started saving it 50 years ago, the current fuel crisis could have been avoided. In order to avoid such crisis in future, the writer draws our attention towards this issue and appeals us to start preserving fuel without any delay.

Explain, "The Suburbs were born with auto, lived with auto and are dying with auto". Suburbs are the areas just outside the large cities. With rapid industrialization and development, the cities became crowded. Therefore people started living little away from the cities enjoying equal opportunities as cities. Because of easy availability of automobiles (vehicles), the suburbs were come into existence. People living in the suburbs are fully dependent on the cities for educational, medical facilities, for their employment and for their daily provisions. Due to easy vehicular movement, they are living happily availing facilities like cities. Now with the fuel crisis, there to and from movements to the city and vice-versa are restricted because of non availability of vehicles. The restriction deprives them from enjoying the facilities which they have been enjoying up to now. Therefore, the people living in suburbs are now facing extreme difficulties in their life as they are now dying with auto.

The Three Day Blow - Ernest Hemingway

"The three day Blow" is a story with an analogy between three day blow and the mental ordeal of the protagonist Nick. The story, which is written by an American writher Ernest Hemingway, traces a movement form conflict, through the separation and suffering to reconciliation. It conveys the fullness of a formal ritual.

It is the story of Nick Wemedge who intended to marry Marjorie. In order to get married with her, it was necessary for him to be back at home to find a job and earn money. That was his original plan in the beginning and later he decided to stay in Charlevoix all winter so that he could be near Marge. He made a plan to go to Italy with her, visiting different places while having a lot of fun together. Unfortunately they had to break away and his plans went astray. All of a sudden, their relation came to an end. Marjorie's mother could be responsible for it because she was regarded as being terrible. Nick was grieved to realize that he had lost her. He felt tat she was gone and he had sent her away. He had no hope to see her again. The separation between Nick and Marjorie seemed to have been the outcome between Nick and Marjorie's mother. It caused him to have a mental strain.

In such an agony, he happened to visit the cottage of Bill when the firtst autumn's storm broke out. The terrible weather condition reflected the mental agony of Nick. Being struck with grief due to the separation, he got into the cottage of Bill with a view to spend three days of his time there during the terrible wind blow. Bill was pleased to have his company. Both of them got into a long pastime activity while drinking wine and having conversation of different matters ranging over different topics such as drinks, baseball, writing, Nick's break up with Marjorie etc. Bill evidently looked happy for he had negative approach towards the married life. He held the view that a man is absolutely bitched and done for once he is married. He referred to Nick's break up as a wise act. Nick was obliged to confess the matter with a tragic tone. In course of the conversation, Bill casually mentioned the possibility of Nick's getting into it again. Nick had never thought about it. It had seemed so absolute. It made him feel better. It brought about a sudden drastic change in his way of thinking. He found himself on high spirits. He felt happy and lighter. According to the writer, nothing was finished and ever lost and also there was always a way out.

With a new spirit, Nick suggested that they should take the guns, go down to the point and look for Bill's father. Soon they were seen moving across the meadow towards the Bill's father. Nick was no more in tragic mood and the wind blew everything out of his mind. This story ends with Nick being reconciled to the loss of his beloved. One can also interpret the happy ending of the story as the hint and hope of reconciliation between Nick and his beloved.

As for the rhetorical strategy, the weather condition as described in the story presents a reflection and analogy of Nick's suffering. The whole setting with stormy wind around acts as a stage with separation at one end and the reconciliation at the other end. Being a dramatic story, it is presented in a sequence of approximately seven scenes: drinking wine, chat about baseball, discussion about literary works, habit of drinking, activities in kitchen, view about marriage as well as Nick's love affair with Marjorie and finally the scene of reconciliation or change of attitude.

Look at a Teacup - Patricia Hampl

"Look at a teacup" is a complicated essay with a great deals of hidden meaning to be read in between the lines. The essay abounds with rich as well as vivid description of china dishes especially tea cups and scattered information about the writer's parents, her relation with mother and her views.

As for the tea cups, they were made in Czechoslovakia and bought in 1939 by her mother. These cups which have been given to the author have a tiny "Czechoslovakia" stamped on the bottom. Each piece is thin and transparent having the palest water-green shade. One can see thin bands of gold around the edges of the saucer and cup. There is also a band of gold on the inner circle of the saucer. Inside the cup, flowers are depicted in different falling altitudes. It seems that as if someone has scattered a bouquet and the flowers appear to be caught in falling motion. One tends to notice a special significance attached to the cups because frequent references are made throughout the essay. In one place, the writer admits that there is slur of recollection about the flowers, something imprecise, seductive and foggy, but held together with a bright bolt of accuracy-perhaps a piercing glance from a long dead uncle, whose face, all the features, has otherwise faded. In another occasion, she wonders in someone with an important black umbrella had considered the future of teacups. Prior to that, she refers to an English politician and his shaking a nation away while furling his black umbrella. Further she alludes to the falling of bodies, bombs and countries. Although each information seems to be unconnected with one another, one can see a thread of associations. They indicate the degeneration that took place in Europe in general and disintegration in Czechoslovakia in particular during the Second World War. The teacups with the painting of falling flowers are relies of the disintegration process that began in Czechoslovakia with Munich Agreement signed on 29th September 1938 by the leaders of UK, France, Germany and Italy. Under this pact, the country was compelled to surrender its Sudetenland to Germany. Neville Chamberlain, the prime minister of Britain and his policy of appeasement failed to prevent the war. The umbrella he carried to Munich with him was called as the taint of Munich. The writer seems to suggest that the English politician with an important black umbrella also played a role in the disintegration of Czechoslovakia that is in the fall of flowers from bouquet.

The close association between the cups and a country is obvious in many expressions. One can notice it in the following expression that, "the cups were discontinued because a country was discontinued" and a country lost its pure science of flinging flowers into the sides of teacups. Hence, "the cup" stands for the relic and the evidence of the mid-century bonfire that is Second World War.

The second aspect of the story is concerned with the unusual treatment of marriage, family and mother – daughter relationship. The writer is said to have been married in 1939 at the offing of the Second World War. This helped her escape the magnitude of history by retreating into pragmatism. Hence, the writer associates the marriage with the fall of the flowers. At one place in the essay, she mentions that her mother's cello voice was drowned somewhere in the sound of falling flowers, in mamage, in the thought of bombs falling on women with flowers, with teacups. Her marriage was the old bow pulled across the cello followed by the long low moan of another generation. On account of such association, the writer uses the word "fall" as the synonym of marriage and refuses to marry at all. Her announcement "We don't get married anymore" indicates that she is not alone in having such interpretation. Likewise, one can see the similar treatment given to the concept of family and mother-daughter relationship. For the mother, family is the most important thing in the world where as for the daughter (the writer) the work is the most important thing. In spite of such an opinion, mother's voice sounded a farewell, the first of all those good-byes mother say to their daughters. She seemed to know that family and separation would always go together. Mothers and daughters are bound to say good-bye to one another. Their relationship ends with parting. The writer's mother illustrates the same point by saying that they did not have any emotional relationships with their mothers.

A Worn Path - Eudora Welty

The story "A worn Path" is remarkable for various aspects. One of them is the mild humour connected with the character, Phoenix Jackson. Besides being strong and adventurous she is found to have a subtle sense of humour. We find it in her behavior with a white man, while she was lying in the ditch the white man pulled

her out of it. There she explained that she was lying back like a June-Bug waiting to be turned over. At the same time when he asked her about her age, she pointed out that she would never tell him about it.

In addition to it, one can find out some humourous events in the story. The instance of picking the nickel that feel out of the white man's pocket is quite humourous. In order to do so she diverted his attention to the fight of the dogs. Before that she instigated that fight. When he was away to attend the fight, she bent down with a great difficulty and care to lift the coin from there. Once she slipped the nickel in her apron pocket she spoke out her thought loudly that god would be watching her steal the coin.

There are many other events which are quite humourous. For instance when she crossed the river by walking on the log in perfect balance she felt that she was not as old as she thought. There she imagined a little boy bringing her a little plate with a slice of marble cake on it. Although it was her imagination she took it as the reality and went to take it by saying that it would be acceptable. This kind of behavior adds a touch of humour.

At one occasion, she mistook a scarecrow for a ghost. Her behavior at the doctors' office is equally humourours. It is so because she forgot the very reason why she was in the hospital. A nurse had to remind her in other words she was reminded of the reason when the nurse asked her about her grandson's throat infection. Thus right from the beginning up to the end readers will find the story humourous and interesting. It is due to the narrative skill of the writer.

Speaking of Children -Barbara Holland

The advantages of parents for having one child are quite obvious. One child is an appendage and it can be outnumbered by parents. It can be carried along on pleasure trips. The most important of all is the privacy, which remains intact. On the contrary, plural children will be the end of advantages and the beginning of disadvantages. They will be counter-culture in the house and the parents will be outnumbered. There will be no place left in the living room because of the toys all over. Long pleasure trips will be shortened.The parents will be obliged to adjust themselves according to new situation. First priority will have to be given to the children and their matters.The house will be at sixes and sevens. Above all, there will be no privacy for the wife and the husband. They will be interfered and interrupted by the children at every possible moment. Surprisingly enough, due to lack of proximity, the husband and wife will be reduced to the stage of strangers unless some solution is found out to end the new problem.

Q. Does this essay speak in favour or against having many children? Give reasons.

The essay "Speaking of Children" is written by an American writer, Barbara Holland. It is an informal piece of writing made lively and effective through the device of conversation. It examines the negative aspects of having more than one child. Hence, it speaks against having many children.

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Since the writer has focused on the enlargement of the disadvantages for having plural children, it is clear that she is against having plural children.

My Heart Leaps up When I Behold - William Wordsworth

The poem "My heart Leaps up when I behold" is written by William Wordsworth and English poet and worshipper of nature and simplicity. The poem is based on the recollection of the poet's childhood experience and feelings that bear the stamp of continuity.

The poem deals with the spontaneous overflow of those powerful feelings and joys as felt by the heart of the poet in his childhood and manhood at the sight of a rainbow in the sky and the poet hopes to feel the same in the old age.

The poet describes the influence of a rainbow upon his heart. According to his words, he feels the same joy and happiness when he was a child and he does feel the same experience in his old age. In the absence of such feelings, the poet admits he will prefer death as a better alternative. The poem ends with the wish of the poet for his days to be bound with each other by natural piety.

The poem consists of a well-known paradox "the child is father of the man". It implies that as a child for the first time he felt the joy while looking at the nature in the form of a rainbow and every child does have some kind of experience before he attains manhood. In this regard he is senior to man and therefore the father of the man.

A Story - Dylan Thomas

This humorous story is narrated by a very young who is living with his uncle and aunt. In this story, the boy presents the adults' world from a child's point of view. This story is about a day's outing to Porthcawl by motor coach. In the first part of the story, the boy describes his uncle and aunt using metaphors and similes. The uncle was big and noisy whereas his wife was small and quiet who used to move on padded paws. The boy compares his uncle with a buffalo and a dismantle ship. He compared his aunt with her cat because of her quick and quiet movement and with a mouse because of her nibbling habit and tiny tone.

Every Saturday night after heated arguments, the aunt used to hit the uncle on the head after the uncle lifted her on to a chair. The boy also describes uncle's few friends in the story. Mr. Benjamin Franklyn collected the money for the outing and bought 20 cases of light wine. Will Sentry kept a strict vigil on Benjamin by following him everywhere in order to guard the money. One Sunday evening Benjamin and Will Sentry came to uncle with a list of persons who had paid for the outing for his approval. After their departure, the aunt asked the uncle to choose either her or the outing. The uncle however chose the outing at which she became furious at breakfast. The next Sunday the boy found that the aunt had already left the house.

Finally the boy describes that the uncle and his friends made a trip to Porthcawl for the outing. When they were out of the village for their destination, they found that old O'Jones had been left behind and they had to go back to the village to pick up him. After O'Jones got on, Mr. Weazely wanted to go home to take his teeth. However his friends convinced him that the teeth wouldn't be necessary for him in the outing. On the way to the Porthcawl they stopped at every public house (Bar) and drank alcohol heaving the boy outside as children were not allowed into the bars on seem a river on the way they went swimming there. They didn't actually arrive at Porthcawl on the way home, it was already hate everything. Old O'Jones started cooking his dinner with kerosene stove and other members started drinking alcohol sitting in a circle in front of closed bar. The boy began to sleep leaning on his uncle's waist coat.

The writer in the story is also able to create humor by describing the uncle, aunt, uncle's friends and their behavior. However, the writer points out towards the bitter aspect connected with human behavior and habit of drinking alcohol. Alcoholic drink may change people's behavior making them selfish, cruel and indifferent towards others suffering. Alcohol brings the nice atmosphere of uncle's family on the verge of breakfast. Uncle and his friends also exhibited cruelty towards the small boy after drinking alcohol as they were totally careless about him during the entire trip.

The Last Voyage of the Ghost Ship - Gabriel Garcia Marquez

Gabriel Garcia Marquez in his story The Last Voyage of the Ghost Ship which is written in Stream of consciousness style of writing describes the growth of an ordinary boy to an assertive (strong and confident) young man.

Many years ago, at night in the month of March the boy saw very large ship without light and sound while moving towards sandy beach near the village the boy saw the ship breaking and sinking into the sea but he didn't hear any sound. The boy thought that he had a bad dream in the previous night as he didn't see any wreckage at the place where the ship broke into pieces. The boy saw the same ship appearing at the same place and destroying like previous year and he was sure that he wasn't dreaming. He told his mother about the ship but she didn't believe him and thought her son became crazy. His mother used to spend almost her night sitting on her chair after the death of her husband 11 years ago. As the chair was very old she brought second hand chair from the market. But she died that very night sitting on the newly bought chair. Four more women from the same village also died sitting on the same chair. So the chair was thrown into the sea considering it is an evil chair. After the death of his mother the boy became orphan and started stealing fish form the boats to survive rather than depending on the charity of the villagers who had hated him.

A few years later at night in the month of March the boy saw the same ship while watching the ship. He shouted loudly calling the villagers to watch the ship. But when the villagers reached there, the ship had already broken and sunk into the sea. The poor boy was beaten badly for disturbing and scaring the villagers at midnight. The boy made a plan to show that them the ship so that they would believe him. A few years later in the same night of March, the boy stole a boat and kept waiting for the ship where he had seen in last year. When the ship arrived he lit a lamp on his boat, the ship followed the light and the boy let the ship towards his village. When the ship brought near the village, he blew its large whistle and lit all the lights. All the villagers wake up because of the sound and started coming out of their houses. The ship came onto the ground by the village and stopped moving in front of the church, then all the villagers saw the ship and believed the boy, the boy became very happy.

Travelling Through the Dark - William Stafford

American poet William Stafford in his poem Travelling through the Dark presents the conflicts between physical action and emotion and responsibility to take appropriate course of action even in critical situation. The poet also satires the self proclaimed nature lovers who are responsible for the difficult state of wild animals and environmental degradation.

While driving on the edge of Wilson river road, once the poet saw a dead deer lying on the road. He stopped there to clear the road by pushing the deer off the road into the river as the road wasn't wide enough. It was difficult to drive past the deer because the car might collide with the possible danger of falling off the road and get killed, the poet observe that the deer has been killed recently which was already stiff and almost cold. While pulling it to the corner of the road for pushing into the river, the poet observes its large belly and realized that the deer was pregnant. Although the body inside was still alive and waiting to be born, it was unlikely to born because its mother had already been dead. The poet was greatly confused in deciding correct of action in that difficult situation.

The lights of the car were on and the engine was making a low continuous sound. The animal with live inside it was lying dead on the road whereas, the lightless car seemed to be alive. Standing by the light of the car, the poet tell as if the tragic seen was being watched silently by wild animals too. He found himself in confusing state to choose appropriate step at this situation. However, accepting the ground reality and thinking seriously for other natural lovers, the poet changed his idea suddenly and pushed the deer into the river making the road free for others. Choosing the easy curse of action, the poet placed himself in the row of self responsible for ecological imbalance.

Using irony, the poet expressed that people are totally indifferent (careless) about the plight (sorrow) of wild animals because of their unwise activities. Although they are selfish and cruel towards the animals, they pretended to be nature lovers. The poet criticize this human behavior and satires their pretention as nature lovers who are in reality the source of problems and plight of the natural world.

Full Fathom Five Thy Father Lies - William Shakespeare

The poem "Full Fathom Five Thy Father Lies" is written by famous English poet and playwright (dramatist) William Shakespeare. This poem appears to be in Act-I, Scene-2 of his tragic comedy play The Tempest. Aerial sings this song to Ferdinand, the prince of Naples who mistakenly thinks that his father is drowned and arrives on the Solitary Island in search of his father.

Aerial says that the body of Ferdinand's father keeps lying 30 ft. below in the sea. His bones are changed into precious corals and his eyes have been transformed into pearls. No part of his body has decayed but changed into something very strange and precious thing belonging to the sea. The sea nymphs are ringing the funeral bell every hour and morning the death of Ferdinand's father.

Aerial consoles Ferdinand that even the death of his father becomes very meaningful because no part of his body is decayed rather changed into strange and very precious things of the sea. The poet in his poem expresses that death is the door step towards eternity which is an inevitable truth of life. Everyone has to confront (face) it, presenting the poem beautifully using various poetic devices, the poet expresses that even the death could be very meaningful it leads towards

eternity and spiritual freedom. Duke of Naples: King of an ancient state of Europe called Naples.

Ferdinand: Prince of Naples.

Aerial: A spirit in human form. One fathom: Six feet

Thy: Your

Define the poetic devices used in the poem with examples. The following are the poetic devices used in this poem. a. Alliteration: It is the repetition of the initial sound of word many times in a sentence. Example: Full Fathom Five thy Father lies Here, the 'F' sound is repeated four times in the sentence.

b. Onomatopoeia: It is a way of expressing on object by imitating its sound instead of naming the object. Example: Ding-dong-bell Mew-cat

c. Assonance: It's the process of making a vowel sound long and nasal to create special effect and to maintain the poetic matter. Example: d-i-ng, d-o-ng

Write a brief account on 'Art and Life' or 'Life and Art'. The skill of creation is called Art. People in possession (having) of this creative skill are known as artist. Art may be different by its form, style and time. Although it is different by its form and style, art always influences human beings. Art always remains as an effective and important motivational factor for human beings. In order to live a happy and satisfied life, art is an inevitable aspect of life. An art in its supreme form is able to provide us the deepest inner freshness which in turn inspires us to make ourselves happy and amiable. To get rid of difficulties of life, it is immensely important for us to appreciate. By appreciating art, we can keep ourselves happy by forgetting the problems of life.

Human life is very transient (short) and when we die our life is finished. But despite this appearance of physical existence, an artist can live an immortal life. Life is sure to come to an end but art remains forever. Laxmi Prasad Devkota is remaining immortal among Nepali people for his fine piece of art in, literature in the form of Muna Madan. Other great artist's of different artistic fields are still immortal because of their great works of art. When we enjoy art we find amiability within ourselves thereby inspiring us to appreciate art. It is indeed true that all works of art provide us the deepest experience and higher value of our life.

Two Long Term Problems: Too Many People, Too Few Trees - Moti Nissani

In the brief essay, Two Long Term Problems: Too Many People, Too Few Trees, Moti Nissani discusses two inter related problems they are, overpopulation and deforestation. With their impact showing several consequences of the twin problems, the writer makes us aware about our duties to solve them and to save the bio-sphere for our future generation.

Scientist from all over the world express their serious concern (worry) about present state of bio-sphere as human activities caused very serious damage on environment and on critical resources. With the introduction of modern medical facilities, nutrition and sanitation, the world's population started growing more than 80 million per year. In Nepal only, in less than 50 years the population increases at the rate of 2.5% per year from 9 million to 25 million. If this alarming growth continuous unchecked, the population of Nepal will be 46 million by 2026 A.D. which would be very difficult for Nepal to accommodate. In order to feed more people, more forest, lands are destroyed in a very large scale. As a result, soil erosion, desertification, flood, landslide, tropical diseases, siltation of rivers and dams and mass migration are increasing. High growth of population has already polluted our food, air, water, rivers, soil, drains and farms. The chances of cancers and emphysema (lungs disease) and asthma are far higher now and we are suffering from pre-mature hearing loss. Lead and dioxide are causing serious effect on children's intelligence and health. The world has already faced frightening problems such as desertification, acid rain, loss of wild species of plants and animals, ozone layer depletion and green house effect because of human caused pollution.

However the situation could be improved by controlling population and pollution, many factors such as modernization, effective family planning measures equal economic, educational and legal opportunities to woman will help to control the rapid population growth. In order to set this world for our future generation, we must save forest by reducing population pressure on it through effective family planning measures and educating people. We may also save the forest by making effective and strict laws with a provision to impose high tax on wood product and provision of incentive for pressuring forest. There should be a provision in the law to punish severely for destroying forest. Massive reforestation, another effective step will benefit the world in conserving biodiversity, pristine wildness and to minimize desertification, flood and weather extremes. By controlling population and saving forest, we may solve this planet for our future generation utilizing our knowledge to convert our wisdom, courage and passion into practice to turn this world into a heaven.

What prime (main) problems does the writer discuss in his essay? Or What remedial measures does the writer suggest to overcome (solve) them? The writer discusses about overpopulation and deforestation with their severe consequences in the essay, Two Long Term Problems: Too Many People, Too Few Trees. The writer suggested overcoming them. However the situation could be improved by controlling population and pollution, many factors such as modernization, effective family planning measures equal economic, educational and legal opportunities to woman will help to control the rapid population growth. In order to set this world for our future generation, we must save forest by reducing population pressure on it through effective family planning measures and educating people. We may also save the forest by making effective and strict laws with a provision to impose high tax on wood product and provision of incentive for pressuring forest. There should be a provision in the law to punish severely for destroying forest. Massive reforestation, another effective step will benefit the world in conserving biodiversity, pristine wildness and to minimize desertification, flood and weather extremes. By controlling population and saving forest, we may solve this planet for our future generation utilizing our knowledge to convert our wisdom, courage and passion into practice to turn this world into a heaven.

What is wrong in Nissani's view with treeless in Nepal? Or According to the writer, what's wrong with treeless in Nepal? The writer expresses his concern about deforestation crisis in Nepal. Showing devastating effecting of deforestation in Nepal, the writer makes us conscious about the importance of preservation of forest. According to him, destruction of forest in Nepal will cause soil erosion in every rainfall. The eroded soil will be deposited in the rivers making them shallow and gradually causing siltation of rivers and dams. After the deforestation, every heavy rainfall is likely to cause devastating flood in plains of Nepal, India and Bangladesh. The destruction of forest in turn contributes to greenhouse effect irreparable (that can't be repair) loss of many thousands species of animals and plants, landslides, draught and weather extremes. Therefore, besides causing serious flood in Nepal, India and Bangladesh deforestation in Nepal in the long run will also damage the quality of life and the ability of Biosphere to sustain life.

The Lamentation of the Old Pensioner - W.B Yeats

W.B Yeats in his poem The Lamentation of the Old Pensioner recollects his young and energetic youth and laments at his neglected state in his old age.

Understanding a long journey of life through ups and downs the poet feels tired, upset and heading a neglected life in his old age. The poet in his old age now is companion less and protecting himself from the rain taking shelter under a broken tree. But in his young and colorful days in the past. The poet used to be surrounded by his friends discussing love and politics in such raining days. He was actively involved in politics and the political situation was calm and quiet during his time. He recollects the peaceful political situation of his time and contracts the present violent political situation where people are collecting weapons and making conspiracy to over through the government to get power however, the poet is different about present political situation who is mentally thinking about cruel time that has transfigured him from young to old depriving him from enjoying his colorful life.

The poet in his old age now feels neglected and lonely and struggles with difficulties of life alone. However, the memory of his glorious past days when he used to be the point of attention and attraction to everybody is still very fresh in his mind. Although, he is physically weak, old and disfigured now, his memory is still interact which time is not being able to remove from his mind. The poet considers that the time is responsible for his present neglected condition. Therefore, the poet expresses his anger with the time by splitting into its face for changing him from young to old.

About Love - Anton Chekov

Revealing (showing) his perception about mysterious Love, Anton Chekov in his story About Love expresses that love is governed by emotions which doesn't care any physical restriction. Describing three love stories, the writer puts forward logic that, "Love is different in each situation and love isn't confined within marital relationship".

In a rainy day Alyohin narrated love stories to his friends while having breakfast. Nikanor, a cook was in love with a beautiful maid servant Pelageya and they were living in the same house although they weren't married. When Nikanor was drunk and had a violent temper he used to abuse and bit her. Sometimes, she had to hide herself to avoid misconduct from Nikanor being a person of religious conviction, Nikanor insisted that Pelageya. However, she didn't want to marry with Nikanor, rather she was ready to live with him just so, despite their contradictory (opposite) views and characters, they were in deep love with each other which was a great mystery. Alyohin, the narrator, while studying at universities used to be in love with a university girl and was living with her in the same house. Although, Alyohin wanted to devote himself completely in love, the girl constantly used to think about monetary and household matters and about destiny of their love. He considered such behaviors in love would be the hindrance and source of irritation and dissatisfaction.

Alyohin also narrated his own love story with Anna Alexeyevna. On coming back home after graduation from university he found that the landed properties had been mortgaged by his father to meet his educational expenses. To pay off the debt, he decided to live in the village working in the farm. However, he had been elected an honorary justice of court of peace and had to go to the town frequently to participate in court session. Once he was invited to dinner by Mr. Luganovich, the assistant president of the court where Alyohin meet his wife Anna, he realized as if he had been familiar with Anna since his childhood. After the meeting, Alyohin started visiting Anna's house very frequently and gradually they fall in love with each other. However, being trapped by their own reasons and logics because of fear of social criticism, they refrained from expressing their love to each other. Being tired of maintaining two relationships with her husband and Alyohin, Anna started exhibiting carelessness towards her family and became a patient of nervous prostration disease. She was advised to make medical treatment in Crimea. In the meanwhile, Luganovich got transfer order to western province.

To bid farewell to Anna, huge crowd was their at the railway station on the day of her departure. When she bade farewell to her husband, children and friends, Alyohin entered into the cabin to see her of f. When their eyes met, they couldn't resist themselves from expressing their love to each other. In the mean while, the train started moving and Alyohin got down at next stoppage and moved homewards with heavy heart. On listening to his story, Alyohin's friends concluded that he should devote himself in other profession rather than farming to keep him happy.

The writer by discussing three love story's shows the mysterious nature of love, love is not confined and restricted by physical restriction because it is guided by emotion of human being. Showing restlessness of Alyohin who was a bachelor was in love with Anna despite the fact that she was mother of two children, the writer has provide that love is not confined by marital relationship.

Why did Alyohin and Anna Alexeyevna conceal their love to each other? Or Why Alyohin and Anna didn't express their love to each other? Alyohin and Anna didn't express their love to each other rather they concealed it cowardly both of them were guided by their own reasons. Logic Alyohin, a bachelor and educated fellow despite being in deep love with Anna couldn't express his love as he couldn't gather courage to confront social criticism. He thought that there would be sharp social criticism on expression of his love to Anna. He also thought that his revolution (expression) could be a betray and breach of trust to the Love and trust exhibited by Anna's husband and children. Since Alyohin was working hard in the field of himself and didn't have sound financial condition, he hesitated to express his love thinking that he wouldn't be able to keep Anna happy with the present financial condition. He was also afraid to the likely difficulties Anna would have to face if he would die or ill if they stop to love each other.

On the other hand guided by her own ethics, Anna didn't express her love to Alyohin. It was very difficult to her to confess her love to Alyohin and detach (keep away) herself from the Association of her husband and children. She was in heave mental pressure as her exposition could complicate Alyohin's life which was already surrounded by problems. Furthermore being the mother of the two children she didn't consider herself to be the young and energetic Anna to begin new life with Alyohin. More often she was in opinion that Alyohin should marry a beautiful and intelligent girl who would be good housewife and helpmate to him. Therefore it was extremely difficult for Anna to propose herself to Alyohin by expressing her love to him. She considers it would be deceptive step that would be morally unjustifiable and incorrect. Because of reasons mentioned above, Alyohin and Anna didn't reveal (express) their love to each other.

Explain, "Love is different in each situation". In a rainy day Alyohin narrated love stories to his friends while having breakfast. Nikanor, a cook was in love with a beautiful maid servant Pelageya and they were living in the same house although they weren't married. When Nikanor was drunk and had a violent temper he used to abuse and bit her. Sometimes, she had to hide herself to avoid misconduct from Nikanor being a person of religious conviction, Nikanor insisted that Pelageya. However, she didn't want to marry with Nikanor, rather she was ready to live with him just so, despite their contradictory (opposite) views and characters, they were in deep love with each other which was a great mystery.

Alyohin, the narrator, while studying at universities used to be in love with a university girl and was living with her in the same house. Although, Alyohin wanted to devote himself completely in love, the girl constantly used to think about monetary and household matters and about destiny of their love. He considered such behaviors in love would be the hindrance and source of irritation and dissatisfaction.

Alyohin also narrated his own love story with Anna Alexeyevna. On coming back home after graduation from university he found that the landed properties had been mortgaged by his father to meet his educational expenses. To pay off the debt, he decided to live in the village working in the farm. However, he had been elected an honorary justice of court of peace and had to go to the town frequently to participate in court session. Once he was invited to dinner by Mr. Luganovich, the assistant president of the court where Alyohin meet his wife Anna, he realized as if he had been familiar with Anna since his childhood. After the meeting, Alyohin started visiting Anna's house very frequently and gradually they fall in love with each other. However, being trapped by their own reasons and logics because of fear of social criticism, they refrained from expressing their love to each other. Being tired of maintaining two relationships with her husband and Alyohin, Anna started exhibiting carelessness towards her family and became a patient of nervous prostration disease. She was advised to make medical treatment in Crimea. In the meanwhile, Luganovich got transfer order to western province.

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Explain, "Love isn't confined by marital relationship". Alyohin, the narrator, while studying at universities used to be in love with a university girl and was living with her in the same house. Although, Alyohin wanted to devote himself completely in love, the girl constantly used to think about monetary and household matters and about destiny of their love. He considered such behaviors in love would be the hindrance and source of irritation and dissatisfaction.

Alyohin also narrated his own love story with Anna Alexeyevna. On coming back home after graduation from university he found that the landed properties had been mortgaged by his father to meet his educational expenses. To pay off the debt, he decided to live in the village working in the farm. However, he had been elected an honorary justice of court of peace and had to go to the town frequently to participate in court session. Once he was invited to dinner by Mr. Luganovich, the assistant president of the court where Alyohin meet his wife Anna, he realized as if he had been familiar with Anna since his childhood. After the meeting, Alyohin started visiting Anna's house very frequently and gradually they fall in love with each other. However, being trapped by their own reasons and logics because of fear of social criticism, they refrained from expressing their love to each other. Being tired of maintaining two relationships with her husband and Alyohin, Anna started exhibiting carelessness towards her family and became a patient of nervous prostration disease. She was advised to make medical treatment in Crimea. In the meanwhile, Luganovich got transfer order to western province.

To bid farewell to Anna, huge crowd was there at the railway station on the day of her departure. When she bade farewell to her husband, children and friends, Alyohin entered into the cabin to see her off. When their eyes met, they couldn't resist themselves from expressing their love to each other. In the mean while, the train started moving and Alyohin got down at next stoppage and moved homewards with heavy heart. On listening his story, Alyohin's friends concluded that he should devote himself in other professional rather than farming to keep him happy.

The writer by discussing three love story's shows the mysterious nature of love, love is not confined and restricted by physical restriction because it is guided by emotion of human being. Showing restlessness of Alyohin who was a bachelor was in love with Anna despite the fact that she was mother of two children, the writer has provide that love is not confined by marital relationship.

Grandmother - Ray Young Bear

American Indian poet Ray Young Bear in his poem Grandmother describes his grandmother using similes, metamorphose and sense verbs. Depicting (pointing) a portrait (image) of grandmother of his tribe. The poet also reveals (show) the socio-economic status of Mesquaki tribe which he belongs.

The grandmother of the poet is the source of love and inspiration for him. As the poet was closely associated with his grandmother, her image is evergreen in fresh in his mind if the poet saw his grandmother from a far distance he would instantly recognize her because of her purple scarf around her neck and plastic shopping bag in her hand. If the grandmother touch his hand were of his grandmother only because they would feel warm and damp with smell of root. This indicates poet's poor financial state which made the grandmother work in the field despite her old age. If the poet heard a voice coming from the rock, he would immediately know that the voice was of his grandmother as it would blow inside him like a light and warm on stirring a dying fire at night. The words would be inspiring for him as they would activate his inner feeling making the loving memory of his grandmother evergreen and very fresh.

The poet is successful in drawing the picture of his grandmother which is appealing to our senses. Deviating (going away) from usual grammatical rules and rules of the poetry, the poet has used small letters in the entire poem to draw the attention to the readers. The poet also reveals the socio-economic status of 'Mesquaki' tribe to which he belongs.

What sense verbs does the poet use to describe his grandmother? Or How does the poet look towards his grandmother? The poet has very affectionate and most respectful feeling towards his grandmother. His description of his grandmother in the poem using various poetic devices reveals that she is the source of love and inspiration for the poet. He seems to be strongly guided by the inspiration of his grandmother it is his close association with grandmother that inspires him to recognize, feel and understand her even from a far distance without looking her appearance his imagination of blowing words of grandmother from the rock entering inside him, enlightened him removing the darkness of his life. This words also inspire him to move forward enthusiastic way. The poet has evergreen and fresh memory of the grandmother which is highly motivated factor of his life. The poet is devotedly guided and inspired by the loving memory of his grandmother.

The Lost Doll

Why do you suppose almost everyone in the village attended Carmen's funeral? Carmen was very loveable child. Though she wasn't healthy, she was bright, kind, lovely and beautiful child. She was so attractive that everyone falls in love with her. She amazed people with her cute little acts and behaviours. That's why everyone in the village loved her so they attended Carmen's funeral.

Why do you suppose the people marched single file to the cemetery? In my opinion, I think that the people marched in a single-file procession to the cemetery because may be it was their culture, tradition followed by their ancestors or may be the road or the path might have been narrow. So the vehicles couldn't go through that path.

What indications are there in the story that the Soto family was poor? The Soto family was really poor. Roberto had to work very hard to feed his family as a result he had very hard hands. Similarly, Carmen their daughter who was very sick since her birth died in a early age as the Soto's couldn't afford her medical treatment.

Why do you think, Rosa gave Carmen's things to someone from another village? (Why didn't she give them to a neighbour or the priest of her own village?) In my opinion, I think due to the un-sudden death of Carmen. Her family was in a great shock. Rosa didn't want any emotional attachment with Carmen. She wanted to forget Carmen completely so she gave Carmen's things to someone from another village.

Why did Roberto want to save Carmen's things? After the un-sudden death of Carmen, Roberto still had hoped to have another child. Even though the doctor told them that it was difficult to have a baby, he still had hope. So he wanted to save Carmen's things.

Why did Rosa say that there was no reason to save them? Rosa became very practical after the death of Carmen. She believed in the medical science and experiments. As the doctors told them that there was no hope after Carmen's death. So Rosa said that there was no reason to save Carmen's things.

Rosa said to her husband, "False hope is not good." When does hope becomes false? How can we know when hope is false? Hope becomes false when it is not fulfilled. We know it when we fail to achieve the desire thing for a long time. Rosa's hope was shattered as she couldn't get another child for four years and her only child died sick.

What did Rosa want to say when she said to her husband, "You know that in these four years……?" Finish the sentence for her. Rosa wanted to say when she said to her husband that, "You know that in these four years, you had your hands fall with a sick child."

Why do you think Roberto thought of Carmen's doll when he looked out the window to the backyard? When Roberto looked out the window to the backyard, he thought of Carmen and her cute little acts then suddenly he thought of the doll that Carmen had. Carmen used to play with the doll every time. She never left the doll alone.

What made them finally forget about the lost doll? After one year of Carmen's death, the Soto family welcomed their happiness. Good news came i.e. Rosa Soto became pregnant. This made them very happy which was lost due to the loss of Carmen. Thus, due to happiness, they were finally able to forget about the lost doll.

Do you think Evangelina was a good name for the new baby? Explain. Yes, in my opinion. I think Evangelina was a good name for the new child because the word Evangelina meant good news and due to the birth of Evangelina, the Soto family was complete. It brought pursuit of happiness in the family which was lost before due to the death of Carmen.

The Recurring Dream

What do you think is the reason some people have recurring dreams? In my opinion I think the reason for some people have recurring dream is tiredness, work load, psychological or mental problem or it may be the continuous thinking about the same things or characters or dream.

Why do you think Kim has this dream? Kim works at an office where daily there is lots of workload which creates tiredness or mental pressure. So due to this, Kim might have had this dream.

It says in the story that Kim simply goes into the house in her dream, but it doesn't say how she enters. How do you think she enters? (Remember the ending of the story) In her dream, Kim's spirit is activated and spirit doesn't need any entrance to go anywhere. Thus in this way, Kim could have entered the room. According to the ending of the story, Kim is a ghost.

In your opinion, why does Kim wake up each time she tries to speak to the man in her dream? Kim wakes up each time she tries to speak to the old man in her dream because her body and spirit is interconnected.

Why does Janet want to take Kim to her parents' farm for a few days? Janet wants to take Kim to her parents' farm for few days in order to make her mentally refreshed or she may forget about the terrible dream.

When Kim sees a cottage like the one in her dream, Janet doesn't want her to go see it. Why? When Kim sees a cottage like the one in her dream, Janet doesn't want her to go see it because Janet doesn't believe in Kim's story.

Why does Kim's body shake when she sees the little old man at the door of the cottage? Kim's body shake when she sees the little old man at the door of the cottage because as in her dream, everything was same i.e. her dream came true. She couldn't believe it. She was very much surprised as all the things of her dream came true.

Why does the little old man close the door when he sees Kim? The little old man closes the door when he sees Kim because according to him Kim is a ghost so he is scared of her.

Why does Kim say something about the FOR SALE sign? When Kim sees the old man, she realized that her dream was true. Everything happened as in her dream so she was a bit surprised and also curious about it. She had no other idea to speak. She anyhow needed to find out the truth about the particular dream. So she said something about FOR SALE sign.

Why do you think the cottage is for sale? In my opinion, I think the house is haunted by the ghost so due to this the cottage might be for sale.

Old Questions

Chemistry, Grade 11 - 2069 (2012)

Physics New Course Grade 11 - 2069 (2012)

Computer Science, Grade XI - 2069 (2012)

Biology, Grade XI - 2069 (2012)

Compulsory English, Grade XI, - 2069 (2012)

Physics

Physics is the natural science that involves the study of matter and its motion and behavior through space and time, along with related concepts such as energy and force. Wikipedia

Old questions

- Physics New Course Grade 11 - 2069 (2012)

Important Questions and Solutions for Physics

1. Heat and Thermodynamics

Lens Formula

This note was submitted by Niranjan Gopali from Thankot, Kathmandu.

Rotational Motion

Rotational Inertia: That property of an object to resist any change in its state of rotation. If at rest the body tends to remain at rest; if rotating, it tends to remain rotating and will continue to do so unless acted upon by a net external torque.

Torque: The product of force and lever-arm distance, which tends to produce rotation.

Center of Mass: The average position of mass or the single point associated with an object where all its mass can be considered to be concentrated.

Center of Gravity: The average position of weight or the single point associated with an object where the force of gravity can be considered to ace. Usually the same place as the center of mass.

Equilibrium: The state of an object when not acted upon by a net force or net torque. An object in equilibrium may be at rest or moving at uniform velocity; that is, not accelerating.

Centrifugal Force: An outward force that is due to rotation. In an inertial frame of reference, it is fictitious in the sense that it doesn't act on the rotating object but on whatever supplied the centripetal force; it is the reaction to the centripetal force. In a rotating frame of reference, it does act on the rotating body and is fictitious in the sense that it is not an interaction with an agent or entity such as mass or charge but is a force in itself that is solely a product of rotation; it has no reaction-force counterpart.

Angular Momentum: A measure of an object's rotation about a particular axis; more specifically, the product of its rotational inertia and rotational velocity. For an object that is small compared to the radial distance, it is the product of mass speed, and radial distance of rotation. Angular Momentum = rotational inertia x rotational velocity (mvr)

Conservation of Angular Momentum: When no external torque acts on an object or a system of objects, no changes of angular momentum takes place. Hence, the angular momentum before an event involving only internal torques is equal to the angular momentum after the event

Gravity

Kepler's Laws of Planetary Motion: 1] Each planet moves in an elliptical orbit with the sun at one focus 2] The line form the sun to any planet sweeps out equal areas of space in equal time intervals 3] The squares of the times of revolution (days, months or years) of the planets are proportional to the cubes of their average distances from the sun.

Weightlessness: condition wherein gravitational pull appears to be a lacking.

Spring Tide: A high or low tide that occurs when the sun, earth, and moon are all lined up so that the tides due to the sun and moon coincide, making the high tides higher than average and the low tides lower than average

Neap Tide: A tide that occurs when the moon is midway between new and full, in either direction. Tides due to the sun and moon partly cancel, making the high tides lower and the low tides higher than average.

Gravitational Field: The space surrounding a massive body in which another mass experiences a force of attraction

Black Hole: The configuration of a massive star that has undergone gravitational collapse, in which gravitation at the surface is so intense that even the star's own light cannot escape.

Big Bang: The primordial explosion that is thought to have resulted in the expanding universe

Stability: In order for an object to be stable, its center of gravity must lie directly above a point of support

The state of motion of the center of mass in a system can only be changed by forces outside the system

Escape Speed: That speed which is sufficient to propel an object away from a planet, or any object

Tides: Tides are caused by the variation of force on the earth exerted by the moon (and the sun) The effect of the moon is about 4 times greater than that of the sun.

Vibrations and Waves

Summary of Terms:

Sine Curve: A wave form traced by simple harmonic motion that is uniformly moving in a perpendicular direction, like the wavelike path traced on a moving conveyor belt by a pendulum swinging at right angles about the moving belt.

Amplitude: For a wave or vibration, the maximum displacement on either side of the equilibrium (midpoint) position.

Wavelength:the distance between successive identical parts of a wave

Hertz (Hz): unit of frequency; one vibration per second is 1Hz

Period: The time required for a vibration or a wave to make a complete cycle

Wavespeed: The speed with which waves pass by a particular point frequency x wavelength

Sound

Summary of Terms

Infrasonic: A sound frequency too low to be heard by the normal human ear. i.e. below 20Hz

Ultrasonic: A sound frequency to high to be heard by the normal human ear. i.e. about 20kHz

Compression: Condensed region of the medium through which a longitudinal wave travels.

Rarefaction: Rarefied region, or region of lessened pressure, of the medium throughout which a longitudinal wave travels.

Reverberation: Re-echoed sound.

Refraction: The bending of a wave through either a non-uniform medium or from one medium to another, caused by differences in wave speed.

Forced Vibration: The setting up of vibrations in an object by a vibrating force.

Natural Frequency: A frequency at which an elastic object naturally tends to vibrate, so that minimum energy is required to produce a forced vibration or to continue vibration at that frequency.

Resonance: The result of forced vibrations in a body when an applied frequency matches the natural frequency of the body.

Beats: A series of alternate reinforcements and cancellations produced by the interference of two sets of superimposed waves of different frequencies, heard as a throbbing effect in sound waves.

Carrier Wave: The wave, usually of radio frequency, whose characteristics are modified in the process of modulation.

Modulation: The process of impressing one wave system upon another of higher frequency.

Amplitude Modulation: A type of modulation in which the amplitude of the carrier wave is varied above and below its normal value by an amount proportional to the amplitude of the impressed wave.

Frequency Modulation: A type of modulation in which the frequency of the carrier wave is varied above and below its normal frequency be an amount that is proportional to the amplitude of the impressed signal. In this case, the amplitude of the modulated carrier wave remains constant.

Transverse Wave: A wave in which the individual particles of a medium vibrate from side to side perpendicularly to the direction in which the wave travels. (Strings)

Longitudinal Wave: A wave in which the individual particles of a medium vibrate back and forth in the direction in which the wave travels. (Sound)

Interference Pattern: The pattern formed by superposition of different sets of waves that produces mutual reinforcement in some places and cancellation in others.

Standing Wave: A stationary wave pattern formed in a medium when two sets of identical waves pass through the medium in opposite directions.

Doppler Effect: Change in frequency of sound or lighter due to relative motion of source and receiver.

Bow Wave: The V-shaped wave made by an object moving across a liquid surface at a speed greater than the wave velocity.

Shock Wave: The cone-shaped wave made by an object moving at supersonic speed through a fluid.

Sonic Boom: The loud sound resulting from the incidence of a shock wave.

Satellite Motion

Summary of Terms:

Satellite: A projectile or small celestial body that orbits a larger celestial body.

Ellipse: The closed oval-like curve wherein the sum of the distances from any point on the curve to both foci is a constant. When the foci are together at one point, the ellipse is a circle. The farther apart the foci, the more eccentric the ellipse.

Escape Speed: The speed that a projectile, space probe, or similar object must reach to escape the gravitational influence of the earth or celestial body to which it is attracted.

Equations, Equivalences, and Concepts:

The sum or KE and PE for a satellite are a constant at all points along its orbit.

For a satellite in circular orbit, it is always moving perpendicularly to the earth’s gravitational field.

Because a satellite moves at right angles to the earth’s gravitational field, no change in speed occurs - only a change in direction.

The higher the orbit of a satellite, the less it’s speed and the longer its period.

Electrostatics

What determines resistance?

Type of material, shape and size; like a hose-bigger means less R, longer means more R

Electric current flows from high potential to low potential (volts)

Thus in a -12v DC battery the current travels from - to +

How are electricity and gravity the same?

They both a forces, and follow the inverse-square law

How are they different?

Electricity is a much stronger force

Gravity is exclusively attractive, while electricity is both repellant and attractive

Electrostatics: The study of electric charges at rest relative to one another

Capacitor: An electrical device, in its simplest form a pair of parallel conducting plates separated by a small distance, that stores electric charge.

Coulomb’s Law: the relationship among electrical force, charge, and distance.

Coulomb: the SI unit of electrical charge.

Conductor: any material thru which charge easily flows when subject to an external force.

Insulator: any material that resists charge flow thru it when subject to an external force.

Semiconductor: a poorly conducting material, such as crystalline silicon or germanium that can be made a better-conducting material by the addition of certain impurities or energy.

Charging by contact: The transfer of charge from one substance to another by physical contact between substances.

Charging by induction: the change in charge of a grounded object, caused by the electrical influence of electric charge close by but not in contact.

Electrically polarized: term applied to an atom or molecule in which the charges are aligned so that one side is slightly more positive or negative than the opposite side.

Electric field: the energetic region of space surrounding a charged object. About a charged point, the field decreases with distance according to the inverse-square law.

Electric potential energy: the energy a charge possesses by virtue of its location in an electric field.

Electric potential: the electric potential energy per amount of charge, measured in volts, and often called voltage.

Potential difference: the difference in voltage between two points, measured in volts.

Electrical Resistance: the property of a material that resists the flow of an electric current thru it. (Ohms).

Superconductor: a material in which the electrical resistance to the flow of electric current drops to near zero or zero under special circumstances that usually include low temperatures.

Direct Current: an electric current flowing in one direction only.

Alternating Current: electric current that repeatedly reverses its direction; the electric charges vibrate about relatively fixed points. In the U.S. the vibrational rate is 60Hz.

Electric Power: the rate of energy transfer, or the rate of doing work; the amount of energy per unit time, which electrically can be measured by the product of current and voltage. Measured in watts or kilowatts.

Series circuit: an electric circuit with devices having resistances arranged in such a way that the same electric current flows through all of them.

Parallel circuit: an electric circuit with two or more resistances arranged in branches in such a way that any single one completes the circuit independently of all the others.

Notes:

Electrons can be forced into vibration by the vibration electric fields of electromagnetic waves

Color

At the resonant frequencies where the amplitudes of oscillation are large, light is absorbed. But at frequencies below and above the resonant frequencies, light is re- emitted (reflected) An object can only reflect frequencies that are present in the illuminating light.

A red piece of glass appears red because it absorbs all the colors that compose white light, except red, which it transmits.

The energy of the absorbed frequencies increase the kinetic energy of the molecules and the glass is warmed.

Any of the three additive primaries can be produced by a combination of any two of cyan, magenta, or yellow pigments. The latter three are called subtractive primary colors.

A color plus its opposite (complementary) produce white.

The tinier the particle, the higher the frequency of light it will scatter.

Of the visible frequencies violet light is scattered the most, followed by blue, green, yellow, orange, and red.

When white light passes through a thick atmosphere, the higher frequencies are scattered the most while the lower frequencies are transmitted with minimal scattering.

As the day progresses and the sun is lower in the sky, the path through the atmosphere is longer, and more blue is scattered from the sunlight. The removal of blue (through scattering) leaves the transmitted light more reddish in appearance.

Water is transparent to nearly all the visible frequencies of light, but strongly absorbs infrared waves.

Water molecules very weakly resonate in the visible red, which causes a slight absorption of red light in water. Red light is reduced to a quarter of its initial brightness by 15 meters of water.

Terms:

Additive primary colors: The three colors, red, blue, and green, that when added in certain proportions will produce any color in the spectrum.

Subtractive primary colors: The three colors of absorbing pigments-magenta, yellow and cyan- that when mixed in certain proportions will reflect any color in the spectrum.

Complementary colors: Any two colors that when added produce white light.

Reflection and Refraction

Fermat’s Principle: Out of all possible paths that light might take, to get from one point to another, it takes the path that requires the shortest time.

Law of Reflection: The angle of incidence equals the angle of reflection.

Plane mirrors: The observer sees the image of a candle at a point behind the mirror. The light rays do not actually come from this point, so the image is called a virtual image.

Causes of refraction: the bending is caused by a change in speed.

Dispersion: Violet light travels about one percent slower in ordinary glass than does red light.

Terms:

Reflection: the return of light rays from a surface in such a way that the angle at which a given ray is returned is equal to the angle at which it strikes the surface. When the reflecting surface is irregular, light is returned in irregular directions; this is diffuse reflection.

Refraction: the bending of an oblique ray of light when it passes from one transparent medium to another.

Critical angle: the minimum angle of incidence at which a light ray is totally reflected within a medium.

Total internal reflection: the total reflection of light traveling in a medium when it strides on the surface of a less dense medium at an angle greater than the critical angle.

Converging lens: A lens that is thicker in the middle than at the edges and refracts parallel rays passing through it to a focus.

Diverging lens: A lens that is thinner in the middle than at the edges, causing parallel ray passing through it to diverge.

Virtual image: an image formed by light rays that do not converge at the location of the image. A virtual image is that reflected by a mirror; it cannot be displayed on a screen.

Real image: An image formed by light rays that converge at the location of the image. A real image can be displayed on a screen.

Aberration: a limitation on perfect image formation inherent, to some degree, in all particle systems.

Light Waves

A soap bubble appears iridescent in white light when the thickness of the soap film is about the same as a wavelength of light.

Bright fringes occur when waves (from both slits) arrive in phase; dark areas result from the overlapping of waves that are out of phase.

Diffraction grating disperses white light into colors, and is used in spectrometers.

The amount of diffraction depends on the wavelength of the wave compared to the size of the obstruction that casts the shadow. The longer the wave compared to the obstruction, the more the diffraction occurs.

Terms:

Huygens’ Principle: the theory by which light waves spreading out from a point source can be regarded as the superposition of tiny secondary wavelets.

Diffraction: the bending of light around an obstacle or through a narrow slit in such a way that fringes of light and dark or colored bands are produced.

Interference: the superposition of waves producing regions of reinforcement and regions of cancellation. Constructive interference refers to regions of reinforcement; destructive interference refers to regions of cancellation. The interference of selected wavelengths of light produces colors known as interference colors.

Polarization: the alignment of the electric vectors that make up electromagnetic radiation. Such waves of aligned vibrations are said to be polarized.

Hologram: a two dimensional microscopic diffraction pattern that shows three dimensional optical images.

Light Emission

Summary of terms:

Excitation: the process of boosting electrons in an atom or molecule from a lower to a higher energy level.

Emission Spectrum: the distribution of wavelengths in the light from a luminous source.

Spectroscope: an optical instrument separates light into its constituent frequencies in the form of spectral lines

Incandescence: the state of glowing while at a high temperature, caused by electrons in vibration atoms and molecules that are shaken in and out of their stable energy levels, emitting radiant energy in the process. The peak frequency of radiant energy is proportional to the absolute temperature of a heated substance; f ~ t

Absorption Spectrum: a continuous spectrum, like that of white light, interrupted by dark lines or bands that result from the absorption of certain frequencies of light by a substance through which the radiant energy passes.

Fluorescence: the property of absorbing radiant energy of one frequency and re-emitting radiant energy of lower frequency. Part of the absorbed radiant energy goes into heat and the other part into excitation; hence the emitted radiant energy has a lower energy and therefore a lower frequency than the absorbed radiant energy.

Phosphorescence: a type of light emission that is the same as fluorescence except for a delay between excitation and de-excitation, which provides an afterglow. The delay is caused by atoms being excited to energy levels that do not decay rapidly. The afterglow may last from fractions of a second to hours, or even days, depending on the type of material, temperature, and other factors.

Laser (light amp. by stimulated emission of radiation): an optical instrument that produces a beam of coherent monochromatic light.

Notes=C/F

The temperature of incandescent bodies, whether they be stars or blast-furnace interiors, can be determined by measuring the peak frequency of radiant energy they emit.

Incoherent white light contains waves of many frequency (and wavelengths) that are out of phase with one another

Light of a single frequency and wavelength is still out of phase

Coherent light: all the waves are identical and in phase.

Light Quanta

When the energy of a photon is divided by its frequency, the single number that results is the proportionality constant, called Planck's constant, h (6.6 x 10-34 joule- sec)

Observations contrary to the wave picture for the analysis of photo electricity:

1] the time lag between turning on the light and the ejection of the first electrons was not affected by the brightness or frequency of the light. 2] The effect was easy to observe with violet or ultraviolet light, but not with red light. 3] The rate at which electrons were ejected was proportional to the brightness of the light. 4] The maximum energy of the ejected electrons was not affected by the brightness of the light, but there were indications that the energy did depend on the frequency of the light.

-One photon is completely absorbed by each electron ejected from the metal. (All or nothing)

-the energy of each photon is proportional to the frequency of light, while the number of photons has to do with its brightness.

-light travels as a wave and hits as a stream of photons

The act of observing something as tiny as an electron produces a considerable uncertainty in either its position or its motion.

Summary of terms:

Complementarity: (Bohr) the principle that wave and particle models of either matter or radiation complement each other and when combined provide a fuller description of either one.

The Atom and the Quantum

Notes: The electron doesn't radiate light while it accelerates around the nucleus in a single orbit, but that radiation of light takes place only when the electron jumps orbit from a higher energy level to a lower energy level.

Color depends on the (distance of) jump. Bohr's views explained the regularities being found in atomic spectra.

Summary of terms:

Ritz combination principle: the theory that the spectral lines of the elements have frequencies that are either the sums or the differences of the frequencies of two other lines.

de Broglie matter waves: the associated wave properties of all particles of matter. The wavelength of a particle wave is related to its momentum and Planck's constant, l=h/momentum

Shrodinger's wave equation: the fundamental equation of quantum mechanics, which interprets the wave nature of material particles in terms of probability wave amplitudes.

Correspondence principle: the rule that a new theory is valid provided that, when it overlaps with the Old, it agrees with the verified results of the old theory.

Stress and Strain Curve

Stress strain (curve):

The diagram shows the stress-strain curve for a ductile material. From the first part OA it is clear that Stress ∝ Strain. So, up to the point A, known as proportionality limit, Hooke's law is obeyed. On further increase in stress, strain also increases but they are not increased proportionally. If the wire is unloaded up to the point B, it regains it's original shape and size, so the point B is known as elastic limit or yelled point.

Beyond B if the stress is increased the strain increases largely, if the wire is unloaded it doesn't regains it's original form, i.e. the curve retraces from C to O1 showing permanent set. And body shows the plastic behavior. On further increase in stress, the strain produces largely upto the point E at which stress is said to be breaking stress. Beyond E even a stress is decreased, the strain is increased and finally at D known as fracture point the wire is fractured.

From O to B the body undergoes plastic deformation which forms B to D, it undergoes plastic deformation. If the plastic deformation from elastic limit B and fracture point D is large then the body is said to be ductile if it is small the body is britile.

Heat and Thermodynamics

What is heat? Heat is a form of energy which gives us sensation of warmth. In other words, we can define heat as the total sum of kinetic energy produced due to the vibration of molecules of the element. Its unit is Joule (J) in SI system and calorie in CGS system.

What is temperature? The degree of hotness or coldness of body is called temperature. It is also defined as the property by virtue of which identify whether the body in thermal equilibrium or not. When two bodies are in thermal contact they posses a common property which is represented by a numerical value is called temperature. Temperature is measured by thermometer. Its unit is Kelvin.

What is temperature of vacuum? Since vacuum doesn't contain molecules or atoms, its temperature is zero because heat energy is the sum of KE of all the molecules present in any substance and temperature is the average KE of all the molecules.

But, according to the radiation theorem, there is no radiation free space in the universe to vacuum also contains temperature or heat which depends as upon the energy density of radiation. Hence, the temperature of vacuum is still a topic to be discussed.

What is thermometre? Write the name of different thermometre? The instrument which deals with the measurement of temperature is called thermometre. The different types of thermometres are:

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Liquid thermometer: These types of thermometres are based on the principle of change in volume with in temperature. Example: M
Gas thermometer: These types of thermometres are based on the principle of change in volume and pressure with change in temper
Resistance thermometer: It is based on the principal of change in resistance with change in temperature. Example: Platinum res
Thermo-electric thermometer: This type of thermometer is based on the principal of production of EMF in thermo-couple in which
Radiation thermometer: This type of thermometer is based on the principle of radiation emmited by a body. It is also measured
Vapour pressure thermometer: It is based on the principal of change in vapour with change in temperature. Example: helium vapo
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Gas thermometer is superior to mercury thermometer. Why? Gas thermometer is superior than mercury thermometer because,

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Expansion of gases is much higher than mercury thermometer.
Gas thermometer has wide range of temperature scale.
Gases are most found in pure state.
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What are temperature scales? The different temperature scales are described below:

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Celsius scale or Centigrade scale: In this temperature scale the lower fixed (freezing point) is taken 0°C and upper fixed poi
Fahrenheit Scale: In this temperature scale the lower fixed point is taken as 32°F and upper fixed point as 212°F. The space b
Reaumer scale: In this scale, the lower point is taken as 0°R and upper fixed point is taken as 80°R. The space between lower
Kelvin scale: In this scale, the lower fixed point is taken as 273K and upper fixed point is taken as 373K. The space between
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*Note: Kelvin scale is considered as the absolute scale among all the scales because it is standard and based on the molecular vibration.

What is triple point of water? Why it is taken as the standard fixed point in modern Thermometry? Triple point of water is defined as the point at which the solid, liquid and gas state of water co-exists at fixed pressure (0.46 atm) and temperature of 273 K. This triple point of water doesn't change with the change in pressure but MP and BP of water changes with pressure in presence of impurities. Because of this reason, triple point of water is taken as the standard fixed point in modern thermometry.

When a mercury thermometer is laid out in direct sunlight, what temperature does it measure? When a mercury thermometer is laid out in direct sunlight, it neither measures the temperature of sun nor the temperature of the air because the bulb of thermometer isn't in thermal contact with air and sun instead it measures its own temperature of mercury in it.

What is calculation of thermometer? Define MP and BP of a liquid. The process of determining the upper fixed point and lower fixed point in the thermometer is called calculation of thermometer.

The temperature at which pure ice melts under standard pressure is called MP and the temperature at which the pure water boils is called BP. Melting point and Boiling point are also called lower fixed point and upper fixed point respectively.

What is absolute zero temperature? Why it is not a zero energy temperature? It is the smallest possible temperature in the universe. At this temperature, molecular vibration of all objects is seized or stopped. Its value is 0K in Kelvin scale and -273°C in Celsius.

Absolute zero temperature is not a zero energy temperature because total energy of molecule or atoms present in any substance is the sum of KE and PE. In which at absolute zero temperature is zero but PE isn't equal to zero. i.e. ET = KE + PE Or, ET = PE (Because KE=0 at T=0K) Hence, ET≠0

Why does heat flows from body at higher temperature to body at lower temperature? Because, body at higher temperature has higher average KE of molecules and body at lower temperature has lower average KE of molecules. When two bodies having higher temperature and lower temperature are keep in contact, the body at higher temperature shares their energy to molecules at lower temperature.

Hooke's Law and Its Experimental Verification

Robert Hooke performed an experiment on coiled spring, metallic rod or metallic wires etc and gave a law known as Hooke's law. It states that, "The restoring force developed on a body is directly proportional to the elongation produced on it, within the elastic limit." i.e. $F \propto x$ $\therefore F=-Kx$ [Where K is proportionality constant.]

Young modified Hooke's statement and stated as, "Within elastic limit, the stress developed on the body is directly proportional to the strain produced on it." i.e. Stress $\propto$ Strain Or, Stress = Constant × Strain $\therefore$ Stress ÷ Strain = E

Where, E is proportionality constant known as modulus of elasticity. Its unit is N/m2 or Pa. Its value depends upon the material and type of deformation produced on the body.

Experimental Verification of Hooke's Law Consider two identical metallic wires A and B on which main scale and vernier scales are fixed and the wires are suspended from rigid support. The kinks produced on the reference wire A and experimental wire B are removed by loading weight at their free ends known as dead loads with the help of meter scale length l at wire B is measured and with the help of micrometer screw gauge its radius r is also measured.

Now, main scale reading and vernier scale readings are noted. The equal loads are added on the pan of wire B and corresponding reading are noted. Let, w1, w2, w3 and w4 be the weights on the wire B and e1, e2, e3 and e4 are corresponding elongations produced, within elastic limit.

Also, if a graph is plotted between weight F and elongation e, a straight line passing through the origin is obtained whose slope is constant, which verifies Hooke's law.

Point to remember: Stress measures deforming force whereas strain measures deformation.

Millikan's Oil Drop Experiment

When a spherical charged body of radius r falls under the effect of various forces in a viscous medium of viscocity η, it attends the terminal velocity vt when the viscous force becomes $6\pi\eta rvt$ (Stoke's law)

Experimental setup and Theory: An experimental setup of Millikan's experiment to determine the change in oil drop is shown in figure. At first, clock oil (non volatile) is allowed to fall drop wise from the opening of upper plate A with the help of atomizer. This law undergoes collision with air particles and gets charged. The whole apparatus is kept inside double walled chamber inside which water is circulated for cooling purpose. The chamber consists of 2 windows.

W1: To pass visible light and W2: To pass X-ray (to ionize the oil drop)

The upper plate A is connected with positive terminal of battery and lower plate B is earthed.

The experiment is performed in two steps.

Step 1 (Electric field is switched off): At this condition, at equilibrium, the drop experiences following forces,

Let, v1 be the terminal velocity of drop then according to Stoke's law, viscous force $F1=6\pi\eta rv1$

When drop attends terminal velocity, we have,

This is the required expression for the radius of the oil drop.

Step 2 (Electric Field is Applied): Now, let us apply the electric field between two plates A and B in such a way that (-ve) charged oil drop moves upward and gains terminal velocity v2. Let q be the charge in the drop and E be the electric field intensity.

When the drop attends uniform velocity we have,

This is the required expression for charge produced in the drop. Thus knowing η,v1,v2, ρ, σ,g, V, d value of q can be determined.

The experiment was performed by taking oils of different sizes and concluded that the charge produced in any drop is always an integral multiple of basic electronic charge e=1.6×10-19 i.e. q=nE

This is also called quantization of charge.

Electrostatics

An atom is electrically neutral. Why? Electrons moves round a positively charged nucleus. Nucleus contains as many positively charged protons as there are electrons. The charge carried by an electron and proton are equal in magnitude and opposite in sign. Hence atom as a whole is neutral.

Explain why the induced charges are not always equal to inducing charge in magnitude? The charge induced on an insulator is always less than inducing charge in magnitude as the insulator has bound charges while charge induced on conductor equals to the inducing charge in magnitude.

Why the positively charged rod does attract paper pieces which are uncharged? When a positively charged rod is brought close to uncharged paper pieces, due to induction, negative charge is developed at near end and positive at remote end. Let Fa=force of attraction between positively charged rod and induced negative charge at remote end of paper piece.

As Fa>Fr this result in attraction of the paper pieces towards the positively charged rod.

The vehicles carrying inflammable materials usually have metallic chain touching the ground. Why? Due to friction, the tires and the body both may get charged. If the charge accumulation is large, there may occur sparking and may cause a fire on inflammable material. If the tires drag a metal chain on the ground, the charges leak to the ground and sparking is avoided.

Can two similarly charged balls attract each other? Yes, when charge on one, say A is much larger than the charge on the other, say B on account of induction, the ball B carrying smaller charge shall acquire some charge of opposite sign lying closer to A. Hence, B will experience some net force of attraction.

Can electric potential exist at a region where the electric field has zero value? Give example to illustrate your answer. Yes, electric potential exists at a point though the field is zero. Let P be point that lies mid way between two equal positive charges q1 and q2. At the point P, fields due to two charges cancel each other but resulting potential at P is twice the potential due to each charge. The electric field intensity inside a charged conducting sphere is zero but potential at any point inside the charged sphere is same as the potential on its surface.

Why sharp points or edges avoided in electrical machine? Leakage of charges from the sharp points or edges of conductor occurs due to dielectric breakdown in air duce to high electric field at the sharp points or edges. That's why edges are avoided in electric machines.

Why can more charge be stored on highly polished metal sphere than in rough surface? Discharging action of sharp points in the conductor discharges the conductor i.e. loss of charges from the sharp points of conductor. To hold a charge in the conductor in air, its surface should be highly polished and edges should be rounded off so that there are no sharp points.

A charged conical conductor loses charges earlier than similar charged sphere. Why? The discharging action of sharp points in the conductor discharges the conductor. This is the reason of loss of electric charges from the sharp points. Hence the conical conductor loses its charges earlier than similarly charged sphere.

Explain the phenomenon of action of sharp points in conical sphere. When the process of air molecules coming in contact with sharp points and moving away after getting similar charges is continued the conductor goes on losing its charge into atmosphere.

Electrostatic experiments do not work well on humid days. Explain Dry air is considered to be insulator at ordinary condition. The presence of humidity makes the air conducting. So the non-conducting parts of apparatus becomes conducting due to which experiments fails to work. Hence, the electrostatic experiments do not work well on humid days.

Electric potential of earth is taken to be zero. Why? Earth is a good conductor of very large size when some charge is given to it, its potential doesn't change. Hence potential of earth is constant and taken to be zero. The potential of earth is considered as reference level and taken as zero potential.

Two lines of force never intersect each other? At the point of intersection of two lines of force, two tangents can be drawn which gives two directions for electric field vector at that point which impossible.

Can two equipotential surfaces intersect each other? An equipotential surface is normal to the electric field intensity. If two equipotential surfaces intersect, electric field at that point will have two directions which is not possible. Two equipotential surfaces cannot intersect at a point.

What do you mean by electron volt? Electron volt is unit of energy used in atomic physics. When a charge q is accelerated through a potential difference of V volts, the energy gained by the charge = qV. When one electronic charge is accelerated through a potential difference of one volt, then the kinetic energy gained by the electron is called 1 electron volt. 1 electron volt = 1 eV = electronic charge x 1V=1.6x10-19x1V=1.6x10-19J

Give some basic differences between electric lines of force and magnetic lines of force. Electric lines of force Magnetic lines of forces 1. Electric lines of force are always normal to the surface of charged conductor. 2. No electric lines of force exist inside the charged conductor 3. Electric lines of force are not close curves. 1. Magnetic lines of force not necessarily are normal to the surface of magnet 2. Magnetic lines of force exist inside the magnetic substance 3. Magnetic lines of force are close curves

Huygen's Principle

Huygen's Principle is a geometrical construction which was designed to determine the position, shape and the size of a wavefront in future if its present position and nature is known.

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In 1678, Huygens proposed that every point to which a luminous disturbance reaches becomes a source of a spherical wave; the s
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Statement

> Each point or particle on the primary wavefront acts as a source of light for secondary wavefronts, which sends out disturbance (waves) in all direction in the similar manner as the original source of light does.
>
> The new position of wave front at any instant of time is given by the forward envelope of second wavelets at that instant.

Explanation: Let us consider a source of light S. which sends out disturbance (wave) in all direction. Let, one of the disturbance be AB which is at distance r = c×t from the sources where,

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c = velocity of light
t = time to reach at AB
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Then, from Huygen's first principle, each point on the primary wavefront acts as a source of light which sends out disturbance in all direction and such disturbance is called secondary wavefront.

Similarly, from Huygen's second principle, the new position of wavefront A^1B^1 s given by the forward envelope of secondary wavelet or a tangent line on collecting all the secondary wavelets, gives the position of secondary wavefront having radius equal to $c(t+\Delta t)$ from the source i.e. $r^1=c(t+\Delta t)$. In this way wave propagates from one point to another point.

The Nitrogen Cycle

Plant absorb greatest quality of nitrogen from the soil for the synthesis of amino acid, protein, enzymes, nucleic acid, chlorophyll, etc. the main source of nitrogen compound is the atmospheric nitrogen. Nitrogen cycle consists of the following steps:

Nitrogen fixation: Conversion of atmospheric nitrogen into free nitrogen is referred as nitrogen fixation. This process is of two types a)Non-biological nitrogen fixation and b) Biological nitrogen fixation

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  a) Non-Biological nitrogen fixation: Nitrogen combines with oxygen during lightening or electric discharge in the cloud. The

 b) Biological nitrogen fixation: it is carried out by certain blue green algae, bacterial etc. Rhizobium inhibeting the root
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Nitrogen Assimilation: Inorganic nitrogen in the form of nitrates, nitrites and ammonia is absorbed by the green plants and converted into nitrogenous organic compound.

Ammonification: The dead organic remains of plants and animal and excreta of animals are acted upon by a number of micro-organism. These organisms utilize organic compound in their metabolism and release ammonia.

Nitrification: Certain bacteria in ocean and soil convert ammonia into nitrites and nitrites into nitrates.

Denitrification: Ammonia and nitrates are converted into free nitrogen by certain microbes. This process is referred as denitrification.

Sedimentation: Nitrates of soils are washed away to the sea or deep into the earth along with percolating water. Nitrates thus from the soil surface are locked up in the rock. This is sedimentation of nitrogen.

Carbon Cycle

Carbon is the basic constituents of all organic compounds. The source of carbon found in the living organism is atmospheric carbon dioxide (CO_2), which is found in Free State in atmosphere and in dissolved state in water. Green plants are autotrophic, which use carbon dioxide through photosynthesis in the presence of sun light and carbohydrate is formed. When herbivorous animal consume the green plants, the carbon compound contained in the plant will be turned into other carbonic compound.

Further degradation of those carbonic compound will occur when carnivorous animal consume those herbivorous animal. Carbon is released to the atmosphere directly as CO_2 in respiration of both plants and animals. They degrade the complex organic compounds into the simpler form, which are then available for other cycles. In this way carbon moves on the ecosystem with the flow of energy and known as carbon cycle. Some forms of the organic compounds found in the earth's crust are coal, gas, petroleum, limestone, etc.

Dalton's Atomic Theory and Stoichiometry

Stoichiometry is the branch of chemistry which deals with the weight relationship in chemical reaction and weight relationship that prevails in a chemical compound. Dalton's atomic Theory In 1808, John Dalton gave his atomic theory and successfully explained the laws of chemical combinations. Before that philosophers were puzzled about the nature of matter. This theory is the milestone in the development of modern chemistry. The original statement given by Dalton has undergone expansion, modifications and clarification to a great extent. The main postulates of this theory are as follows.

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All matter consists of extremely small indivisible particles called atoms.
Atoms of same elements are all alike.
Atoms of different elements are entirely different, and have different properties.
Atoms cannot be destroyed, created or transformed into atoms of other elements.
Atoms combine together in simple whole number ratio to give compounds.
The relative number and kinds of atoms are constant in a given compound.
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The quantitative relationship of chemical combination is governed by the following laws of stoichiometry. Statements of these theories are given below.

The Law of Conservation of Mass: This law was stated individually by two chemists M.V. Lomonosov (in 1756) and Antoine Lavoisier (in 1774). It states that, "Mass is neither gained nor lost during a chemical reaction OR The total mass of the reactants (consumed) during a chemical reaction is equal to the total mass of products formed"

The Law of Constant (definite) Proportion: This law was given by a French chemist Joseph Louis Proust in 1799. It states that, "The same chemical always contain same elements combined together in definite proportion by weight regardless of the origin of the compound."

Law of Multiple Proportion: It was given by John Dalton in 1803. It states that, “When one element combines with another element to form two or more different compounds, then the weights of one of the elements which combine with the constant weight of the other bear a simple whole number ratio to one another.”

Law of Reciprocal (equivalent) Proportion: It was given by Richter in 1792. It states that, “When two different elements combine separately with the same weight of the third element, the ratio in which they do so will be the same or simple multiple ratio in which they unite with each other.”

Gay Lussac’s Law of Gaseous Volumes: It states that, “Whenever gases react, they do so in volumes which bear a simple ratio to one another and to the volumes of the products if these are also gases provided all measurements are made under similar conditions of temperature and pressure."

Diffraction of Light Waves

Though this question is not being asked for long questions, it is an important topic for short questions. Differences of diffraction with interference is among frequently asked long question in HSEB Physics Grade 12 exam.

Definition: The phenomenon of bending of light round the corners and spreading into the regions of the geometrical shadow is called diffraction. (It occurs with all waves including sound waves, water waves, and electromagnetic waves such as visible light, x-rays and radio waves.)

In the above figure (a), when a narrow slit AB is placed in the path of the light, then only part A′B′ of the screen should be illuminated and no light should enter the regions XA′ and B′Y of the screen. Similarly, when an obstacle AB is placed as shown in the figure (b), then its distinct geometrical shadow A′B′ is obtained.

This only happens when the size/length of the slit or the obstacle is large. But when the size of obstacle is (made) small, light enters in the region of geometrical shadow. Such phenomenon (entering of light in the geometrical region) is known as diffraction of light.

Required Conditions The light waves are diffracted only when the size of the obstacle is comparable to the wavelength of the light. The size of obstacle/slit shouldn’t be large in size.

Examples:

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Colours seen in a spider web when it is facing the sunlight.
The rainbow like colour pattern seen in CDs, DVDs.
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Diffraction Grating Grating here means a regularly spaced collection of identical and parallel light waves. Diffraction grating is an optical component with a periodic structure which splits and diffracts light into several beams travelling in different directions. The directions of these beams depend on the spacing of the grating and the wavelength of the light so that the grating acts as the dispersive element.

Diffraction Pattern in Image We can take an example of image diffraction in camera lens. When the light forming an image passes through a lens aperture, the wave front is distorted in much the same way as an ocean wave is distorted which causes the reduction in image resolution or makes the image blur. This sort of distortion effect is called image diffraction.

Resolving Power of Optical Instrument It is the ability (of the optical instrument) to produce separate and distinguishable images of two objects lying very close to each other.]

Consider two points on the object that are close together. It is possible that their images may possess diffraction patterns that will overlap and if they are too close, the images of these two points will be indistinguishable from one another.

Resolving power of a Telescope: When we are observing two stars that are very close together and their images should be separated, the aperture of the telescope needs to be as large as possible to give as little diffraction as possible. Mathematically,

Where D = diameter of the objective lens, and λ is the wavelength of the light used.

Difference between Diffraction and Interference Diffraction Interference

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It is the phenomenon of interaction of light coming form different parts of the same wave front.



It is the phenomenon of interaction of light coming from two different wave fronts originating from two coherent sources.

Diffraction fringes are not of the same width.



Interference fringes may or may not be of the same width.

Points of minimum intensity are not perfectly dark.



Points of minimum intensity are perfectly dark.

All bright bands are not of the same intensity.
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All bright bands are of uniform intensity.
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Chemistry

- Chemistry, Question for Grade 11 - 2069 (2012)

Computer Science

Computer science is the study of the theory, experimentation, and engineering that form the basics for the design and use of computers. Wikipedia

Old Questions

Computer Science, Grade XI - 2069 (2012)

Nepali

- Grammar

Career in academia

Introduction

Education sector in Nepal is one of the most competetive area in terms of career growth. There is a large pool of talent with people who are excellent at teaching and most importantly, competing for good teaching positions. That being said, there are still many opportunities created every day. At the time of writing, there are more than 300 positions open in various job sites of Nepal in the private education sector. It does not need to be mentioned that there are so many positions that never make it to these job sites.

Nowadays, even if you are not a teacher, there are many other options and career path one can chose in the education sector. Each must do their research and make up their mind while selecting a career path. For many of us, the main motivation of being a teacher is to help a community grow. Most of the teachers choose this profession because it is rewarding and sense of satisfaction to see someone you've taught go on to become a successful person.

One of the many organizations working for the betterment of education in Nepal, Teach for Nepal is an INGO that is determined to help many understaffed community schools across the country by mobilizing paid volunteer teachers to teach for a certain period of time. The organization is run with donation received from national and international community. Please check it out if you are interested in improving education of community schools in rural areas.

Nepali Job Sites for Education Sector

There are more than a dozen of actively maintained online job sites exclusively operating in Nepal. There are probably many more but some of the most popular are as follows.

merojob

This is probably the most popular job portal of Nepal. It boasts itself as the top jobsite of Nepal. Jobs for education sector can be found listed at Teaching / Education category page.

JobsNepal

JobsNepal is another site that is quite active, education sector jobs can be found at Education category page.

kantipurjob

This is another rising job portal of Nepal, education sector jobs can be found at Education category page.

How To

General *how to* articles.

How to obtain transcript

WIP

How to get your passport

WIP

How to apply for studying abroad

WIP

How to get started in Nepali share market

Introduction

If you are interested in becoming an investor in the Nepali share market but have no clue where to start then you've come to the right place.

This guide is intended for beginners in Nepali share market. If you have anything to add, contribution is appreciated.

Terminology

When it comes to investing, there are many terms that may seem alien to people from different background than finance.

NEPSE

NEPSE stands for Nepal Stock Exchange. It is the main*regulatory body* that overseas all stock and bonds transactions.

publicly traded companies

Companies who have chosen to make their shares available for the public to purchase and sell through NEPSE are publicly traded companies of Nepal.

IPO

IPO means initial public offering.

How to get a driving license

Wip

How to enable FNF (Friends and Family) and My5 call services

This article will teach you how to enable FNF and My5 service in NTC and Ncell respectively.

NTC

Applicable for: This service is available for Post-paid, and Prepaid subscribers of SkyPhone and GSM cards.

By enabling this feature mobile users can make calls to 5 and only 5 other NTC phone numbers (mobile and landline) at a discounted price at any time of the day.

How to enable

- To add a new number type < FNFSUB*No1> send it to 1415. Replace *No1* with your desired number.
- To modify a number type < FNFMOD*OLD No*New No> send it to 1415.
- To delete a number type < FNFDEL*No> send it to 1415.
- To inquiry about FNF type < FNFINQ > send it to 1415.

Learn more on the official NTC website.

Ncell

Applicable for: This service is available Ncell prepaid users only.

Ncell call's it My5 service where you can add upto 5 close people to get calls at a discounted rate of 1.24 paisa per minute. Ncell will deduct Rs. 25.09 per month from your balance if you enable this service. You will also be charged Rs. 6.27 to add, remove, change or delete a number from your My5 group after you've added the first 5 numbers.

- To activate: Dial 5599 or *5599# and then press 1
- To add numbers in your group: Dial 5599 or *5599# and then press 2
- To modify numbers in your group: Dial 5599 or *5599# and then press 3
- To delete numbers in your group: Dial 5599 or *5599# and then press 4
- To know the list of numbers in your group: Dial 5599 or *5599# and then press 5

Read more on Ncell's website and see tariffs here.

How To Earn upto Rs. 5000 By Joining Khalti

Yes! You read it right. You can actually earn upto Rs. 5000 by joining Khalti and referring your friends to join Khalti.

Introduction

Khalti is a digital wallet and a online payment gateway for Nepali citizens. We have a short review for Khalti that you can read here.

Earn during sign up

If you already have a khalti account then skip to the next section. This section is for users who have not signed up for Khalti as of yet. Here are the steps you need to take to earn referral bonus right away.

- Find someone who is using khalti and ask for their referral link. Don't worry, they'll be very happy to provide you their referral link.
- Go to that link and download the khalti app and signup.
- You'll see that your account has Rs. 10 once the sign up is complete.
- Click on the *Fill kyc form* button and submit your information. You'll receive Rs. 20 once your KYC is verified. It might take up to few days for KYC to be verified.
- If you have an online bank (ebanking) account in one of the banks Khalti supports then you can also earn additional Rs. 15 when you load fund for the first time.
- If you don't have an ebanking account then you can load funds using epay's kiosks. See here for locations of ePay kiosks.
- Now it's time for you to earn more, go to the next section.

Earn by referring

If you already have a Khalti account, you might have already received a bonus if you'd used someone's referral link. If you did not sign up using a referral code then you received no bonus but don't worry, you can still earn up to Rs. 5000. Follow these steps.

- Login to Khalti
- Go to side menu bar and tap on Refer and earn or directly tap on the banner of ‘Refer and Earn’ from home screen.
- Now enter the phone number of the person whom you want to refer and click on ‘Send’ or simply share your referral link using Whatsapp, Messenger or any other messaging platform.
- Your Khalti Wallet will be credited with Rs 10 when the friend you referred signs up to Khalti, Rs 15 if the person loads funds for the first time and with Rs 20 when the person gets his/her KYC verified within one week of signup using the referral code

Make sure before you try this you have updated the Khalti App to the latest version

For more info on refer and earn, visit the official khalti website.

Reviews

Khalti Digital Wallet Review

Introduction

Khalti is an online payment service or a digital wallet. It was launched over a year ago and gaining in popularity.

Availability

Available in both Google play store and Apple store.

Features

- Fund can be loaded from multiple banks(Machhapuchchhre, Mega, NMB, NIBL, NIC Asia).
- Fund can be transfered from one account to the other, using the mobile number.
- QR code scanner to do transfer and payments
- Payment features for Mobile balance, landline bill, Dish home, SimTv, ADSL, Recharge card, Subisu,Worldlink, NEA, Midas, Kaspersky, Khanepani, Vianet. etc
- Movie booking, Flight booking and Hotel booking.

Shortcomings

- It still hasn't been integrated with major online businesses such as kaymu.com, QFX Cinemas etc.
- Does not have withdrawl feature yet.
- Does not have many major banks.

I hope they overcome these major shortcomings in the following days, which I hope they will add as early as possible given that they have been growing fast these couple of days.

Summary

The application is very user friendly and easy to use. Lately, it's been getting lots of attention due to it's cash for referal and joining policy. But considering the features it already provides and looking to provide, people might(I am already) get hooked to it. Therefore i think it's here to stay.

Recommendation

Highly recommended

BSc CSIT

Resources for BSc CSIT students. Work In Progress.