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SCHOOL OF ENGINEERING

DEPARTMENT OF CHEMISTRY

CHE 1008 Energy & Sustainability

ASSIGNMENT I

INSTRUCTIONS

- Last date for submission is **30 April 2022**
- Each question carries 6 marks
- Assignment has to **be hand written** and only on A4 sheets
- Order of assignment during submission shall be cover page containing the student details, content sheet with page numbers, answers followed by references

QUESTIONS

1. Name the places wherein you have noticed the wind mills. Explain the components and principle involved.
2. Prepare cells with different electrodes and concentration and record their voltages

   Online resource link: https://web.mst.edu/~gbert/Electro/Electrochem.html

3. With a neat labelled diagram explain the construction and working of Leclanche cell. Give the reactions involved and mention its applications.
4. What are fuel cells? Differentiate between a battery and fuel cell. Mention the advantages and disadvantages of a fuel cell.
5. With a neat labelled diagram explain the construction and working of H_2-O_2 fuel cell. Give the reactions involved and mention its applications.

Ranganatha. S

Instructor in-charge

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SCHOOL OF ENGINEERING

DEPARTMENT OF CHEMISTRY

CHE 1008 Energy & Sustainability

ASSIGNMENT II

INSTRUCTIONS

- Last date for submission is **30 May 2022**
- Each answer carries 10 marks
- Assignment has to **be hand written** and only on A4 sheets
- Order of assignment during submission shall be cover page containing the student details, content sheet with page numbers, answers followed by references
- Students are advised to refer the following links of e-resources

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QUESTIONS

1. Explain the principle and operation of a cell phone battery.
2. Prepare cells with different electrodes and concentration and record their voltages
   Online resource link: https://web.mst.edu/~gbert/Electro/Electrochem.html
3. Imagining no chemicals provided, consider designing a battery. Explain in detail the mechanism, construction and working. (Clue: Lemon)

Ranganatha. S

Instructor in-charge

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ASSIGNMENT
Energy & Sustainability

Pranav Pradeep Roll no.:20211CAI0073
PRESIDENCY UNIVERSITY

Class: 2- Allied 7

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Q1) Name the places wherein you have noticed the wind mills. Explain the components and principle involved.

Ans. A windmill is defined as a machine that converts the kinetic energy of the wind into mechanical energy. All the blades of windmill always rotate in a clockwise direction. The first wind mill was designed in the year 1854 by Daniel Halladay from the U.S.

The best places for wind farms are in coastal areas, at the tops of rounded hills, open plains and gap in mountains - places where the wind is strong and reliable. Situated in Kanyakumari district of the Indian state of Tamil Nadu the 1500 mW Muppandal wind farms is the countries largest onshore wind farm

Components of windmill:

Generator: converts mechanical energy stored in Rotor blades into electrical energy

Tower : Wind mills have different towers of different heights, depending on which height the wind speed is maximum.

Rotor blades: Rotor blades are responsible for converting the winds kinetic energy into mechanical energy

Anemometer: component for measuring wind speed

How does a wind turbine work?

A wind turbine converts wind energy into electrical energy. Wind flows across the blade, the air pressure on one side of the blade decreases. The difference in air pressure across the two sides of the blade creates both lift and drag. The force of the lift is stronger than the drag and this causes the rotor to spin. This rotor is then connected to the generator, which produces electrical energy.

Q2) Prepare cells with different electrodes and concentration and record their voltages.

Cathode: Copper Electrolyte: Copper(II) Nitrate

anode: Iron Electrolyte: Iron(II) Nitrate

conc. of cathode Electrolyte	conc. of anode Electrolyte	Cell Voltage
1.00 (mol/l)	1.00 (mol/l)	0.778V
0.50 (mol/l)	2.00 (mol/l)	0.752V
2.00 (mol/l)	0.50 (mol/l)	0.802V

Cathode: Nickel Electrolyte: Nickel (II) Nitrate

anode: Zinc Electrolyte: Zinc Nitrate

conc of Cathode Electrolyte	conc. of anode Electrolyte	Cell Voltage
1.00 (mol/l)	1.00 (mol/l)	0.513V
0.50 (mol/l)	2.00 (mol/l)	0.487V
2.00 (mol/l)	0.50 (mol/l)	0.541V

Cathode: Silver Electrolyte: Silver Nitrate

anode: Cadmium Electrolyte: Cadmium Nitrate

conc of cathode Electrolyte	conc of Anode Electrolyte	Cell Voltage
1.00 (mol/l)	1.00 (mol/l)	1.190V
0.50 (mol/l)	2.00 (mol/l)	1.166V
2.00 (mol/l)	0.50 (mol/l)	1.210V

REGISTRAR

Cathode: Iron Electrolyte: Iron (II) Nitrate
anode: Zinc Electrolyte: Zinc Nitrate

conc. of cathode Electrolyte	conc. of anode Electrolyte	Cell voltage
1.00 (mol/l)	1.00 (mol/l)	0.322V
0.50 (mol/l)	2.00 (mol/l)	0.296V
2.00 (mol/l)	0.50 (mol/l)	0.349V

Cathode: Copper Electrolyte: Copper (II) Nitrate
anode: Nickel Electrolyte: Nickel (II) Nitrate

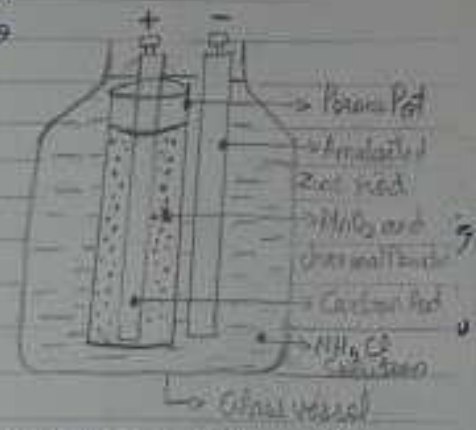
conc. of cathode Electrolyte	conc. of anode Electrolyte	Cell voltage
1.00 (mol/l)	1.00 (mol/l)	0.587V
0.50 (mol/l)	2.00 (mol/l)	0.559V
2.00 (mol/l)	0.50 (mol/l)	0.611V

Cathode: Silver Electrolyte: Silver Nitrate
anode: lead Electrolyte: lead (II) Nitrate

conc. of cathode Electrolyte	conc. of anode Electrolyte	Cell voltage
1.00 (mol/l)	1.00 (mol/l)	0.928V
0.50 (mol/l)	2.00 (mol/l)	0.912V
2.00 (mol/l)	0.50 (mol/l)	0.943V

Q2) With a neat labelled diagram explain the construction and working of Leclanche cell. Give the reactions involved and mention its applications.

Ans The Leclanche cell is a battery which is named after the French scientist Georges Leclanché who invented it in 1866. The Leclanche cell e.m.f is 1.5 volt.



Construction

Leclanche Cell consists of a glass vessel containing a saturated solution of NH_4Cl. An amalgated zinc rod and a porous pot containing a carbon rod packed in a mixture of manganese dioxide (MnO_2) and powered coke are placed in the solution. This pot is sealed at the top with pitch. Zinc rod forms the negative electrode and the carbon rod forms the positive electrode of the cell. Here MnO_2 acts as a depolariser and powdered coke makes MnO_2 electrically conducting.

Anode: Zn rod Cathode: C rod Depolariser: MnO_2 Electrolyte: NH_4Cl

Working

When Zn and C rods are connected to the external load, the following reaction takes place in the cell.

$Zn \rightarrow Zn^{++} + 2e^-$ ——(a)

$2NH_4Cl \rightarrow 2NH_3\uparrow + 2H^+ + 2Cl^-$ ——(b)

$Zn^{++} + 2Cl^- \rightarrow ZnCl_2$ ——(c)

combining equations a, b and c

$Zn + 2NH_4Cl \rightarrow ZnCl_2 + 2NH_3\uparrow + 2H^+ + 2e^-$

The negative charge released is collected by the Zn rod and it becomes negatively charged. Ammonia gas escapes.

The hydrogen ($2H^+$) diffuse through the porous pot and react with MnO_2 as follows

$2H^+ + 2MnO_2 \rightarrow Mn_2O_3 + H_2O + 2e^+$

The positive charge ($2e^+$) is acquired by the carbon rod which becomes positively charged. Mn_2O_3 formed in the porous pot is again converted into MnO_2 by absorbing oxygen (O_2) from the air when left to itself for some time.

A. The potential difference between the negatively charged zinc rod (anode) and positively charged carbon rod (cathode) is set up. The emf of Leclanche cell is 1.5 volt.

Applications

The Leclanche cell was utilised widely for telegraphy, electric bell and signaling work and for work where intermittent and low current was needed. The battery cell by Georges Leclanche proved out to be extremely advantageous in the early years of the telephones.

Q4 What are fuel cells? Differentiate between a battery and fuel cell. Narrate the advantages and disadvantages of a fuel cell.

Ans A fuel cell is an electrochemical cell that converts the chemical energy of a fuel (often H) and an oxidising agent (often O) into electricity through a pair of redox reactions. The first fuel cells were invented by Sir William Grove in 1838. Fuel cells are different from most batteries in requiring a continuous source of fuel and oxygen to sustain the chemical reaction, whereas in a battery the chemical energy usually comes from metals and their ions or oxides that are commonly already present in the battery, except in flow batteries. Fuel cells can produce electricity continuously for as long as fuel and oxygen are supplied. Advantages and disadvantages of fuel cells

Advantages

→ High efficiency - fuel cells can attain over 80% energy efficiency.

→ Good reliability - quality of power provided does not degrade over time.

→ Noise - offers a much more silent and smooth alternative to conventional energy production.

→ Environmental benefits - greatly reduces CO_2 and harmful pollutant emissions.

→ Size reduction - fuel cells are significantly lighter and more compact.

Disadvantages

→ Expensive to manufacture due to high cost of catalysts.

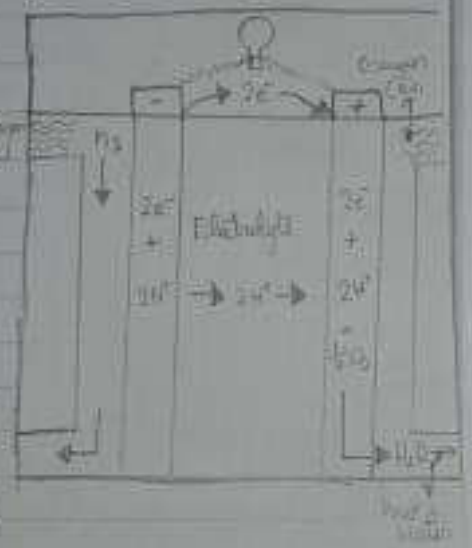
→ Lack of infrastructure to support the distribution of hydrogen.

→ Most of the currently available fuel cells technology is in the prototyping stage and not yet validated.

→ Hydrogen is expensive to produce and not widely available.

Q5) With a neat labelled diagram explain the construction and working of H_2-O_2 fuel cells. Give the reactions involved and mention its applications.

Ans. A fuel cell is a lot like a battery. It has two electrodes where the reactions take place and an electrolyte which carries the charged particle from one electrode to the other. In order for a fuel cell to work, it needs hydrogen and oxygen. The hydrogen enters the fuel cells at the anode. A chemical reaction strips the hydrogen molecules of their electrons and the atoms become ionised to form H^+. The electrons travel through wires to provide a current to do work. The oxygen enters at the cathode, usually from the air. The oxygen picks up the electrons that have completed their circuit. The oxygen enters at the cathode, usually from the air. The oxygen picks up the electrons that have completed their circuit. The oxygen then combines with the ionised hydrogen atoms and water is formed as the waste product which exits the fuel cells. The electrolyte plays an essential role as well. It only allows the appropriate ions to pass between the anode and cathode. If other ions were allowed to flow between the anode and cathode, the chemical reaction within the cell would disrupt.



The reaction in a single fuel cell typically produces only about 0.7V. Therefore, fuel cells are usually stacked or connected in some way to form a fuel cell system that can be used in cars, generators, or other products that require power.

The reactions involved:

At anode: $2H_2 \rightarrow 4H + 4e^-$

At cathode: $O_2 + 4H + 4e \rightarrow 2H_2O$

Net reaction (redox reaction): $2H_2 + O_2 \rightarrow 2H_2O$

Applications

→ Fuel cells electric vehicles, or FCEVs, use clean fuels and are therefore more eco friendly than internal combustion engine-based vehicles.

→ They have been used to power many space expeditions including the Apollo space program

→ Generally, the byproducts produced from these cells are heat and water.

→ The portability of some fuel cells is extremely useful in some military applications.

→ These electrochemical cells can also be used to power several electronic devices

→ Fuel cells are also used as primary or backup sources of electricity in many remote areas.

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At anode: $2H_2 \rightarrow 4H + 4e^-$

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→ Fuel cells are also used as primary or backup sources of electricity in many remote areas.

References

→ www.energy.gov

→ web.mst.edu/~gnest/Electric/Electrochem.html

→ electricalvoice.com

→ en.wikipedia.org

→ Toppr.com

ENERGY

AND

SUSTAINABILITY

CHE 1008

Assignment submitted by :-

Kushaal G.P

20211CIT0148

II Allied - 2

CHE 1008

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) Prepare cells with different electrodes and concentrations and re their voltage.

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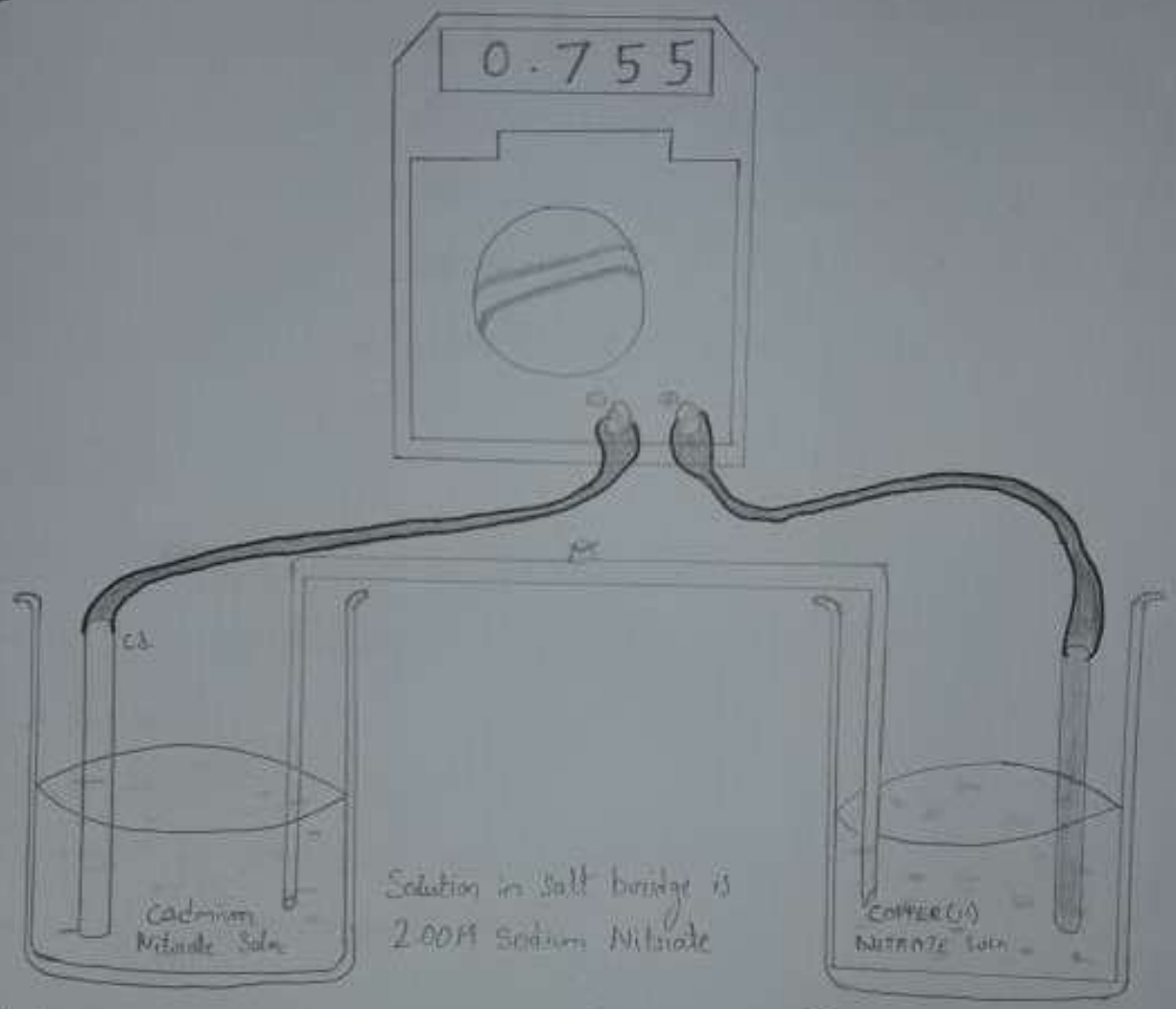
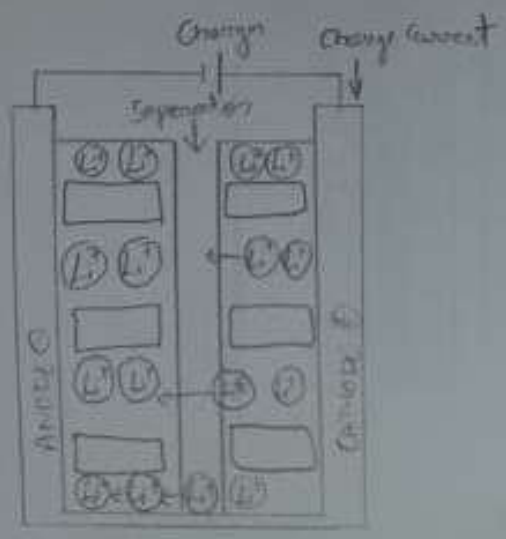


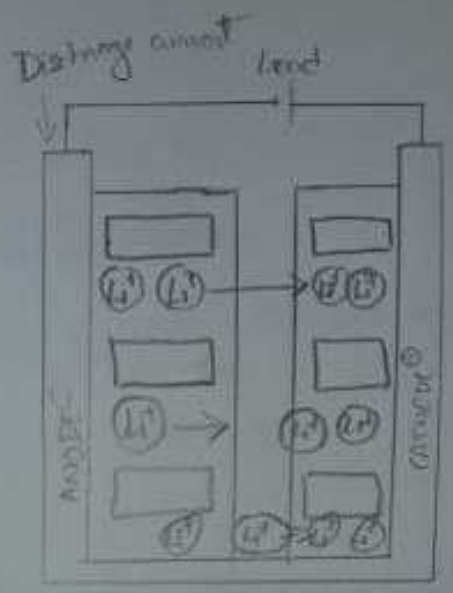
Electrode – Cadmium
Solution – Cadmium Nitrate
Concentration – 1.00 moles/litre

Electrode – Copper
Solution – Copper (II) Nitrate
Concentration – 2moles/litre

The standard reduction potential [E°] for $Cd(s)/Cd^{++}(aq)$ is $\underline{-0.389}$

With a neat labelled diagram, explain the construction and work
a secondary Lithium battery. Give advantages and write down react





Typically, a lithium ion battery consists of two or more electrically
nnected electrochemical cells. When the battery is charged, the ions for
move towards the negative electrode or the anode. When the battery i
mpletely discharged the lithium ions return back to the cathode.

dvantages:-

They have high energy density

There exists no memory effect in Lithium ion batteries

Installation is easy

Average life span is X10 times that of a lead battery.

Imagining no chemicals provided, consider designi
a battery. Explain in detail the mechanism,
construction and working [clue - Lemon]

Lemon battery is a simple battery often made for
the purpose of education. Typically a piece of zinc
metal such as a galvanized nail and a piece of
copper such as a penny are inserted into a lemon
and connected by wires. Power generated by the
reaction of the metals used to power a small
device such as light-emitting diode [LED]. It
is similar to first electrical battery invented in
1800 by Alessandro volta who used brine [salt solu
instead of lemon juice. The lemon battery illustra
oxidation - reduction that occurs in batteries.
Zinc and copper are called the electrodes and th
juice inside the lemon is called electrolyte.

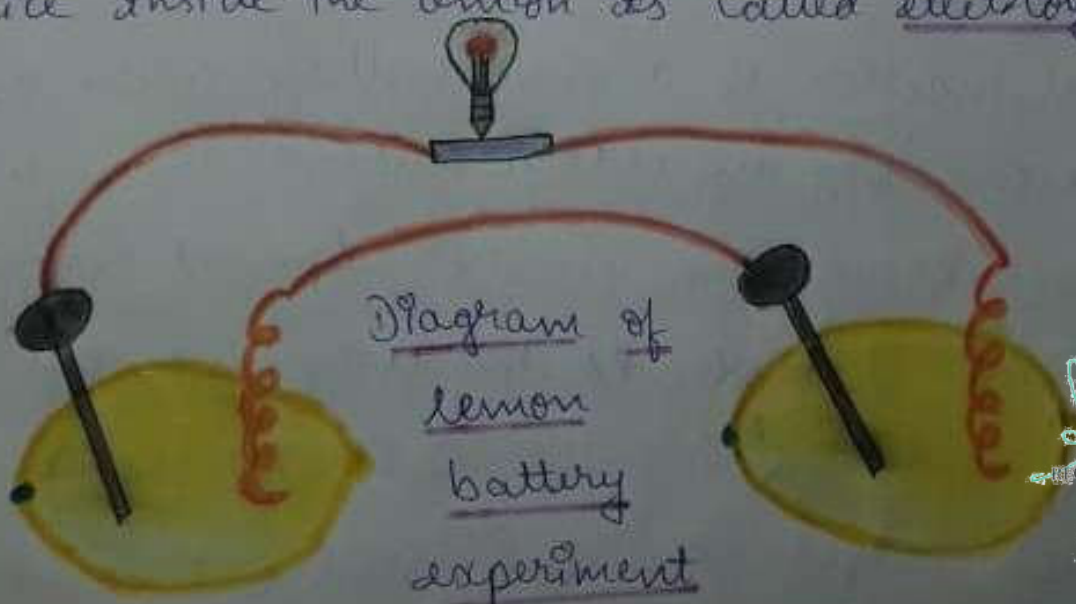


Diagram of lemon battery experiment

many fruits and liquids can be used for the acidic electrolyte. Fruit is convinient bcz it provides both the electrolyte and a simple way to support the electrodes. The acid involved in citrus fruits (Lemons, oranges, grapefruits etc) is citric acid.

=> Students can discover that two identical electrod yield no voltage and that different pairs of metals yield different voltates. The voltages and currents from series and parallel combinations of the batteries can be examined. The current that is output by the battery throut a meter will depend on the size of the electrodes, far the electrodes are inserted into the fruit. and how close to each other the electrodes are placed, the voltage is fairly independent of these details of electrodes.

Chemical reaction of a lemon battery. When the cell is providing an electric current through an external circuit. The metallic zinc at the surface of the zinc electrode is dissolving into the [illegible] zinc atoms dissolve into the liquid electrolyte [illegible] electrical charged ions Zn^{2+} leaving 2 negatively

harged electrons (e^-) behind in the metal

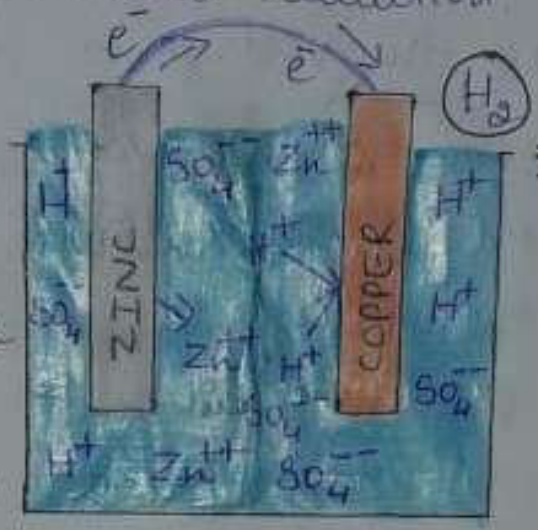
$Zn \rightarrow Zn^{2+} + 2e^-$

This reaction is called oxidation.

$2H^+ + 2e^- \rightarrow H_2$

This reaction is called reduction

Diagram of copper and zinc electrode immersed in sulphate solu^n



Zinc sulpate and

Detailed predections of the model apply to the battery voltage that is measured directly by a meter nothing else is connected to the battery. When the electrolyte was modified by adding zinc sulfate ($ZnSO_4$) the voltage from the cell was reduced as predicted using the Nernst equation for the model. This eq^n essentially says how much the voltage drops as more $ZnSO_4$ is add. The addition of copper sulfate ($CuSO_4$) did not effect the voltage. This result is consistent with the fact that copper atoms from the electrode are not involved in the chemical reaction model for the cell.

When the battery is hooked up to an external circuit and a significant electric current is flowing

the zinc electrodes loses mass, as predicted by the oxidation reaction above. Hydrogen gas evolves as bubbles from the copper electrode. Finally the voltage from the cell depended upon the acidity of electrolyte as measured by it's pH decreasing acidity and increasing pH causes the voltage to fall. This affect is also predicted by the Nernst eqn, the particular acid that was used [citric, sulfuric, hydrochloric etc] does not affect the voltage except through the pH. The Nernst eqn prediction failed for strong acid electrolytes (pH < 3.4) when the zinc electrode dissolves into the electrolyte even when the battery is not providing any current to a circuit. The oxidation-reduction reacn listed above only occur when electrical charge can be transported through the external circuit. In additional, open-circuit reacn can be observed by the formation of bubbles at the zinc electrode under open-circuit. This effect ultimately limited the voltage of the cells to 1.0 V near room temperature at the highest levels of acidity.

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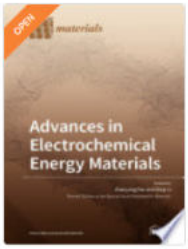

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Author	Fan Zhaoyang, Li Shiqi
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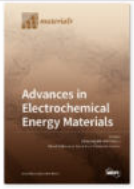

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Chengkang Chang, Jian Dong, Li Guan and Dongyun Zhang
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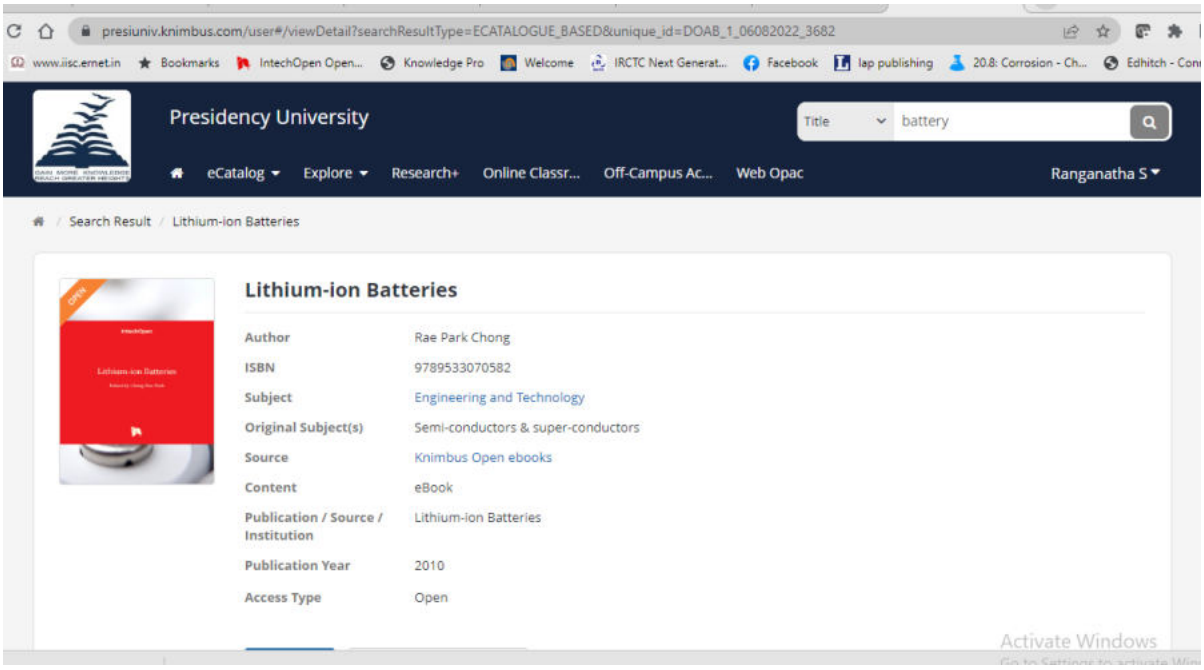

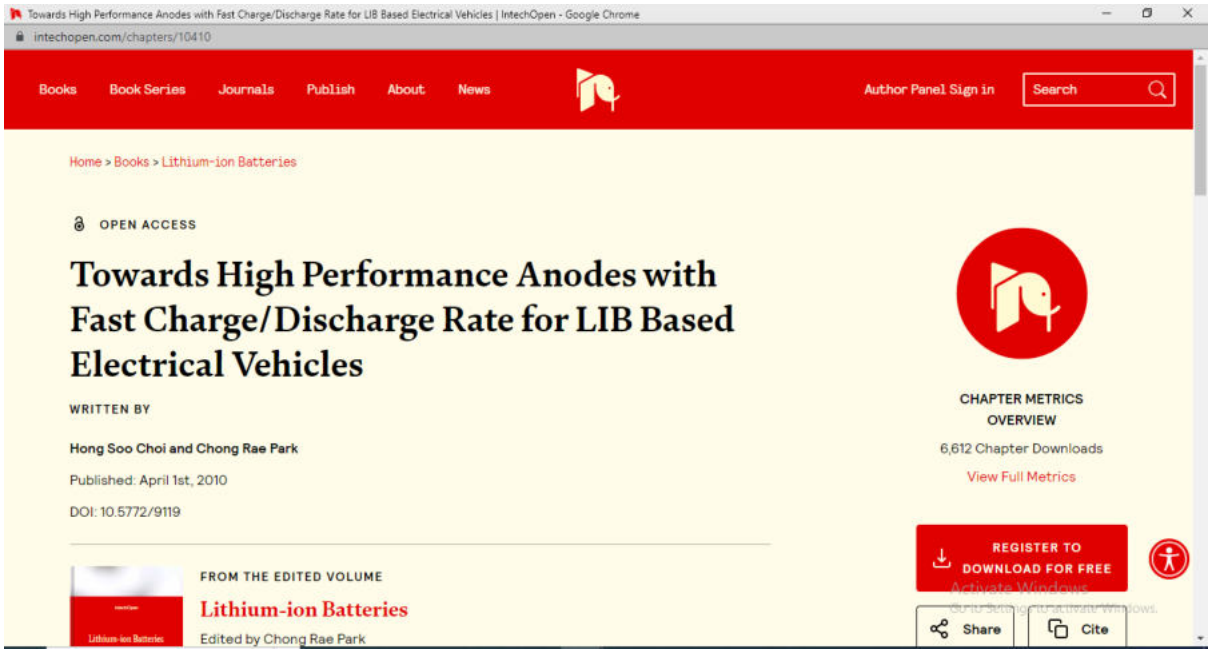

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DEPARTMENT OF CHEMISTRY

Ref.No.:PU/SOE/CHE /**Assignment announcemnet**/2020-21/3rd year/CHE1016

Course Title: Forensic science
Course Code: CHE1016

Name of the Instructor in Charge: Dr. Chaitanhya Lakshmi G

Name of the Instructor: Dr. Chaitanhya Lakshmi G

Answer All the questions. Each question carries 10 marks

1. Write a flow chart to recover deleted mail form G-mail.
2. Discuss any four advanced techniques used in forensic science.

Signature of Instructor In-Charge

(Dr. Chaitanhya Lakshmi G)

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COURSE NAME: FORENSIC SCIENCE

SUBMITTED ON: NOV-2021

SUBMITTED TO: Dr. CHAITANYA LAKSHMI

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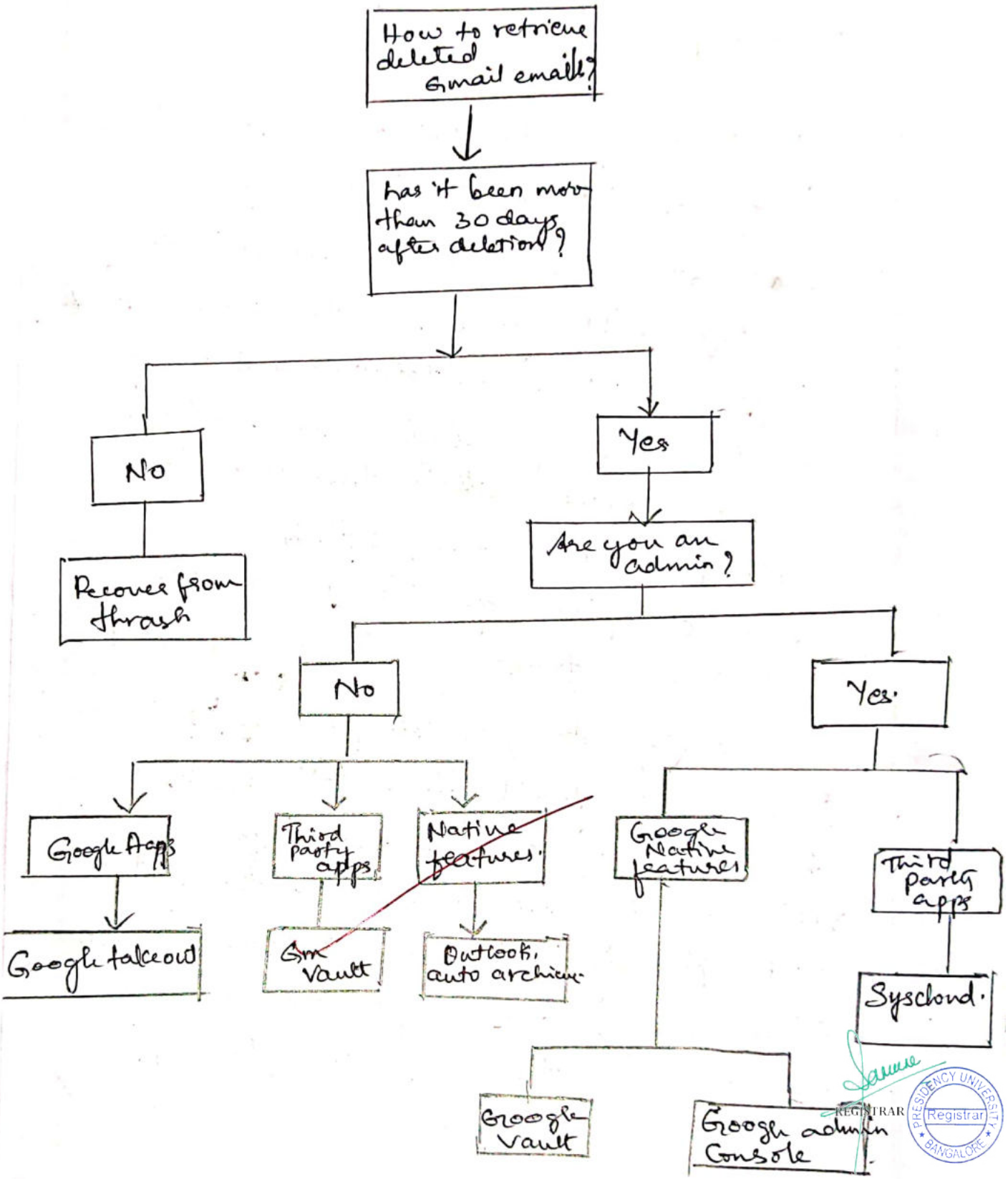
1. Write a flow chart to recover deleted email from a gmail account?



2. Explain any five advanced technologies used in forensic science?

1. DNA Phenotyping :

DNA fragments extracted from hair, body fluids and tissue can be incredibly useful in forensic science. However if the owner isn't registered in a database, turning DNA into useful information can be a challenge. ~~disease~~ ~~advance~~. This is where DNA phenotyping steps up. The field uses complex genetic information derived from genotyping or DNA sequencing to predict physical & biochemical traits. This can include characteristics such as sex, face shape hair & eye colour some of the latest DNA phenotyping techniques can predict skin colour, though the ethics surrounding this are complicated.

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Carbon Dating

Carbon Dating is based on the idea that all living organisms observe atmospheric & radio active carbon also known as C14 as they age. Organisms stop absorbing atm. Carbon when they die, though C14 accumulated over their life time continues to detoriate. Analysing C14 in human leminds, is a useful way to determine when a person died & their age at the time.

Over the past decade an increase in fossil fuel emission as emerged as a unique challenge for carbon dating, with experts warning concentrations of Carbon isotopes in the atmosphere are reaching unusally high levels. This could compromise the accuracy of carbon dating techniques.

Isotope Detection

From bullets to bomb debris, isotope analysis is used by forensic investigators to trace the origin of explosives. The technique is based on the fact that most powerful explosives contain carbon oxygen nitrogen and hydrogen atoms comparing isotopes can be a useful way to analyse explosives and tract the source of origin.

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Forensic Palynology

Providing a connection between a person & a crime seen are object is often critical to building legal cases. Forensic palynology uses pollen grain & spores to establish links & help prove if a person is guilty or innocent. from tracking the origin of illegal drugs such as cocaine & fentanyl to linking offenders to incrimina-ting objects, palynology has a myriad of applications in forensic scien.

Immunochromatography

Body fluids are often invaluable evidence for forensic scientists.

Immunochromatographic strip tests can simultaneously allow scientists to examine biological stains & uncover valuable information about the origins of the fluid. The latest generation of immunochromatographic strip tests can simultaneously detect up to five body fluids. This eliminates the need for multiple tests & allows scientists to carry out multiple tests on a single sample.

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SCHOOL OF ENGINEERING

DEPARTMENT OF CHEMISTRY

Announcement of Assignment-1

Course Title: Fundamentals of Environmental Studies Course Code: CHE 1019

Semester and Year – Ist Sem, Ist Year

Weightage: 12.5% Total Marks: 25

Instructor in Charge: Dr. Amita Somya

INSTRUCTIONS:

- Assignment should be hand-written on A4 Sheets.
- Assignment should consist of cover page including Student particulars, Department, School Name, Course name and Course Code.
- Last date for submission is 15.10.2022.
- All questions are compulsory.

QUESTIONS:

1) What is ecological succession? Explain primary and secondary ecological succession with suitable examples.
2) Define genetically modified crops. Write advantages and disadvantages of genetically modified crops.
3) What is Pest? Explain any TWO methods of pest management.
4) What do you mean by women empowerment? Why women empowerment is important in our society?
5) What is radioactive pollution? Explain in detail how nuclear plants create environmental pollution.

Dr. Amita Somya

Signature of Instructor In-Charge

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SCHOOL OF ENGINEERING

DEPARTMENT OF CHEMISTRY

Announcement of Assignment-2

Course Title: Fundamentals of Environmental Studies Course Code: CHE 1019

Semester and Year – Ist Sem, Ist Year

Weightage: 2.5% Total Marks: 5

Instructor in Charge: Dr. Amita Somya

INSTRUCTIONS:

- Assignment should be hand-written on A4 Sheets.
- Provided E-resource/link for writing assignment: https://www.intechopen.com/chapters/11768
- Snapshot of the link used, should be attached with the assignment.
- Assignment should consist of cover page including Student particulars, Department, School Name, Course name and Course Code.
- Last date for submission is 15.11.2022.

ANSWER THE FOLLOWING QUESTION:

Q. What is air pollution? Explain its integrated impact on forest condition under changing climate.

Dr. Amita Somya

Signature of Instructor In-Charge

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NAME: SARITHA . R. CHOUDHARY.

ID NUMBER: 20221BCP0038.

SECTION: 1BCM.

BRANCH: 1B. COM.

SCHOOL: SCHOOL OF COMMERCE.

COURSE CODE: CHE1019

COURSE NAME: FUNDAMENTAL ENVIRONMENT STUDIES.

SUBMITTED ON: 15/11/22

SUBMITTED TO: Dr. Shashikala.

15/11/22

22/30

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1. What is ecological succession? Explain primary and secondary ecological succession with suitable examples?

Ecological succession is the order of colonization of species in an ecosystem from a barren or destroyed area of land. Mosses and lichens are the first species that inhabit an area. They make the area suitable for the growth of larger species such as grasses, shrubs and finally trees.

"Ecological succession is a series of changes that occurs in a ecological community over time."

Ecological succession is the steady and gradual change in a species of a given area with respect to changing environment. it is a predictable change and is an inevitable process of nature as all the biotic components have to keep up with the changes in our environment.

The ultimate aim of this process is to reach equilibrium in the ecosystem. The community that achieves this aim is called as climax community in an attempt to reach this equilibrium, some species increase in number while some others decrease. Thus, we can say that evolution is a process that has taken place simultaneously with that of ecological succession. Also, the initiation of life on earth can be considered to be a result of this succession process.

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Primary succession :- Primary succession is the succession that starts in lifeless areas such as the regions devoid of soil or the areas where the soil is unable to sustain life.

When the Planet was first formed there was no soil on earth. The earth was only made up of rocks. these rocks were broken down by micro-organisms and eroded to form soil.

The soil then becomes the foundation of Plant life. these plants help in the survival of different animals and Progress from Primary succession to the climax Community.

If this Primary ecosystem is destroyed, Secondary succession takes places.

Secondary succession :- Secondary succession occurs When the Primary ecosystem gets destroyed.
for eg: climax Community gets destroyed by fire. it gets recolonized after the destruction. This is known as secondary ecological succession.

Small Plant emerge first, followed by large Plants. The tall trees block the sunlight and Change the structure of the organisms below the Canopy. finally, the climax Community arrives.

For example: after a forest fire that kills all the mature trees on a particular landscape, grasses might grow, followed by shrubs and a variety of tree species, untill eventually the community that existed before the fire is present again.

Secondary succession begins after a disturbances like a fire.

2). Define genetically modified crops. Write advantages and disadvantages of genetically modified crops?

Genetically Modified or [GM] crops are that type of plants whose DNA has been modified through genetic engineering for imedding a new trait to the plant which does not occur naturally in the species. foods produced from or using GM organisms are often reffered to as Genetically modified foods.

Advantages of genetically Modified or GM crops.

a) It improves production and raise farmer's income
Indian farmers are still practicing traditional process of seeding and cultivation, which required scientific moves for raising their production. Hences, it is one of the moves to enhances the farm production.

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b). It reduces the use of Pesticide and insecticide during farming that might be great moves for the betterment of the food supply.

c). It can feed a rapidly increasing population because it shows dramatically increased yields.

d). It can produce more in small area of land.

Disadvantages of Genetically Modified or GM crops.

a). The production imposes high risks to the disruption of ecosystem and biodiversity because the "better" traits produced from enginnering genes can result in the favouring of one organism. Hence, it can eventually disrupt the natural process of gene flow.

b). It increases the cost of cultivation and more inclined towards marketization of farming that work on immoral profits.

c). The transgenic crops endanger not only farmers but also the trade, and the environment as well.

d). It is biologically altered. Hence, biotech foods may pose a human health risk.

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e). The excessive production of genetically modified foods will be rendered ineffective over time because the pests that these toxins used to deter might eventually develop resistance towards them.

3). What is Pest? Explain any two methods of Pest management?

A Pest is any organism that can spread disease and causes destruction. Pest control is the regulation and the management of all species which are defined as pests.

Us farmers employ a range of Pest management strategies to control weeds, insects, fungi, viruses, and bacteria. They till their soils, rotate their crops, scout their fields, and carefully consider factors such as plant density and planting dates. They also apply organic and synthetic pesticides.

3 Methods of Pests are:

(a) Biological Pest Control.
(b) Mechanical Pest Control.
(c) Poisoned bait.

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a). Biological Pest Control : The use of living organisms to control Pest. A natural enemy such as a parasite, Predator, or diseased organism is introduced into the environment of a Pest or if already present, is encouraged the multiply and become more effective in reducing the number of Pest organisms.

Examples of biological control include the destruction of the citrophilus mealybug in California by two Parasitic species of chalcid wasps imported from Australia, coccophagus gurneyi and Tetrachemus pretiosus; the effective predation of an Australian ladybird beetle or vedalia beetle [Rodolia cardinalis].

b). Mechanical Pest Control : is the management and control of Pests using Physical means such as fences, barriers or electronic wires. It includes also weeding and change of temporat-use to control Pests. Many farmers at the moment are trying to find sustainable way to remove pests without harming the ecosystem.

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Mechanical Control refers to the use of machinery designed to cut, shear, shread, crush, press, lift, Convey, transport, and remove aquatic Plants and associated organic material from Water bodies.

4). What do you mean by women empowerment? Why women empowerment is important in our society?

Women's empowerment can be defined to Promoting women's sense of self-Worth, their ability to determine their own choices, and their right to influences social change for themselves and others.

It is closely aligned with female empowerment - a fundamental human right that's also key to achieving a more Peaceful, Prosperous World.

In western countries, female empowerment is often associated with specific Phases of the Women's rights movement in history. This movement tends to be split into three waves, the first beginning in the 19th and early 20th century Where suffrage was a key features.

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Women's empowerment and promoting women's rights have emerged as a part of a major global movement and is continuing to break new ground in recent years. Days like International Women's Empowerment Day are also gaining momentum.

Topics of Women's Empowerment.

- The women's Empowerment Principles.
- Quotes on women's empowerment.
- The global landscape of women's empowerment.
- Why is empowering girls and women so important.
- Real stories of women's empowerment
  - Marie : one last chance
  - Tabitha : Baking to give back.
- How can I empower women and girls.
- How world vision is helping empower women.

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5) 5): What is radioactive pollution? Explain in detail how nuclear plants create environment pollution?

The Radioactive Pollution is defined as the Physical Pollution of living organisms and their environment as a result of release of radioactive substances into the environment during nuclear explosions and testing of nuclear weapons, nuclear weapon Production and decommission of mining of radioactive ores, handling and disposal of radioactive waste, and accidents of nuclear Power Plants.

Nuclear tests are carried out to determine the effectiveness, yield and explosive capability of nuclear weapons.

The proportion of radioactive Pollution is 15% of the total energy of the explosion.

Radioactive Pollution of Water, Water sources, and air space is the result of radioactive fallout from the cloud of a nuclear explosion.

Radionuclides are the main sources of pollution; they emit beta particles and gamma rays, radioactive substances.

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BANGALORE

FUNDAMENTALS OF ENVIRONMENTAL STUDIES

ASSIGNMENT- 2

5/5

27/12/22

DONE BY

Saritha R Choudhary

1-BCP 20221BCP0038

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Home > Books > Air Pollution

OPEN ACCESS

Air Pollution, Their Integrated Impact on Forest Condition Under Changing Climate.

WRITTEN BY

Algirdas Augustaitis

Published August 17th 2010

DOI: 10.5772/10046

FROM THE EDITED VOLUME

Air Pollution

Edited by Vanda Villanyi

Book Details Order Print

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What is air pollution? Explain the integrated impact on forest condition under changing climate?

Overview: Air pollution is contamination of the indoor or outdoor environment by any chemical, physical or biological agent that modifies the natural characteristics of the atmosphere. Household combustion devices, motor vehicles, industrial facilities and forest fires are common sources of air pollution.

Growing awareness of air pollution effects on forests has, from the early 1980s, led to intensive forest damage research and monitoring. This has focused air pollution control, especially in Europe and North America and to a smaller extent also in other parts of the world. At several forest sites in these regions, there are fast indications of a recovery of forest soil and tree conditions that may be attributed to improved air quality. This caused a decrease in the attention paid by politicians and the public and the public to air pollution effects on forests. But air pollution continues to be effect on forests.

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But air pollution continues to affect the structure and functioning of forest ecosystems not only in Europe and North America but even more so in parts of Russia, Asia, Latin America, and Africa. At the political level, however, attention to climate change is focussed on questions of CO_2 emission and carbon sequestration. But ecological interactions between air pollution including CO_2 and O_3 concentrations, extreme temperatures, drought, insects, pathogens, and fire, as well as the impact of ecosystem management practices, are still poorly understood. Future research should focus on the interacting impacts on forest trees and ecosystems. The integrative effects of air pollution and climate change, in particular elevated O_3, altered nutrient, temperature, water availability, and elevated CO_2, will be key issues for impact research.

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An important improvement in our understanding might be obtained by the combination of long-team multi-factorial-primary experiments with ecosystem-level monitoring, and the integration of the results with ecosystem modelling with in a multiple-constraint framework.

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CHE 1019 – QUIZ

NAME: YESHWANTH.N

ID NO: 20221BCP0064

1. In an ecosystem, the energy flow is always
a) Always unidirectional
b) Always bidirectional
c) In any direction
d) Always down directional

15/20

2. Which is called as autotrophs
a) Green plants
b) Animals
c) Birds
d) All the above

28/12/22

3. In the biosphere energy is received from
a) The Sun
b) The interior of the earth
c) Both A) and B)
d) Work

4. Ecosystem has two components
(a) plants and animals
(b) animals and birds
(c) biotic and abiotic
(d) vertebrates and non-vertebrates

5. Biological equilibrium occurs among the
(a) producers and consumers
(b) producers and decomposers
(c) producers, consumers and decomposers
(d) producers themselves

6. The driving force of the ecosystem is
(a) carbohydrates in plants
(b) biomass
(c) producer
(d) solar energy

7. . Ecosystem contains
(a) producers
(b) consumers
(c) decomposers
(d) all the above

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8. _____ is a term used to refer to the world's top biodiversity-rich countries.

a) Multicultural Countries
b) Megadiversity Countries
c) Monocultural Countries
d) Traditional Countries

9. Wearing away or loss of soil is known as _____

a) Soil conservation
b) Soil erosion
c) Soil convertion
d) None of the above

10. The removal of dissolved minerals (including salts) from sea water or brackish water to produce potable water is called _____

a) Dehydration
b) Distillation
c) Coagulation
d) Desalination

11. The example of brackish water is _____

a) River water
b) Sea water
c) Ground water
d) Pond water

12. Renewable energy resource is_____

a) Any energy that is naturally replenished and do not runout easily
b) Emit harmful gases which lead to air pollution
c) Obtained from fossil fuel
d) A natural substance that is not replenished with the speed at which it is consumed

13. Which of the following is the non-renewable energy source?

a) Solar energy
b) Coal
c) Tidal energy
d) Biomass

14. Which of the following energy sources does not produce carbon dioxide?

a) Petrol
b) Coal
c) Solar energy
d) LPG

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15. The one thing that is common to all fossil fuels is that they _____

a) Were originally formed in marine environment
b) Emit harmful gases which lead to air pollution
c) Have undergone the same set of geological processes during their formation
d) Represent the remains of one living organisms

16. Which of the following is NOT a method for soil conservation?

a) Weathering
b) Contour ploughing
c) Crop Rotation
d) Conservation Tillage

17. One of the ways for biodiversity conservation is _____

a) Gene bank
b) Seed bank
c) Controlling urbanization
d) All the above

18. Zoo is the examples of _____ type of biodiversity conservation.

e) ex-situ
f) ax-situ
g) vx-situ
h) in-situ

19. Pollination is an example of

a) denitrification
b) primary succession
c) carrying capacity
d) mutualism

20. The term biodiversity was purposed by .....

a) W.G. Rosen
b) Utpary
c) Earnest Haeckel
d) Sir Arthur Tansley

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Presidency University
Department of Chemistry , Semester 1

Assessment Status Report

From	22-Dec-2022 (13:00)	To	22-Dec-2022 (16:45) hr
Subject Co	CHE1019	Attended	20
Subject Name	Fundamentals of Environment Studies	Unattende	14
Staff Name			
Assessmen	Quiz - CHE1019		

S.No	RollNo	Student Name	Date	Start time	End time	Total Score
1	16189	shivansh tiwari	N/A	N/A	N/A	N/A
2	20221BBA0050	Aniket Sarkar	N/A	N/A	N/A	N/A
3	20221BBA0263	Shaik Salmaan	22-Dec-20	14:26	14:29	18
4	20221BBA0264	GUGULOTH VIKAS KUMA	N/A	N/A	N/A	N/A
5	20221BBA0265	Mohamed fiqh	22-Dec-20	14:19	14:25	18
6	20221BBA0277	MEHUL VINOD MUTHA	22-Dec-20	14:20	14:22	17
7	20221BBA0278	SHREYASH ASHOK JAIN	N/A	N/A	N/A	N/A
8	20221BBA0281	Keerthana K	22-Dec-20	13:14	13:15	8
9	20221BBA0284	Satyabrata Satapathy	N/A	N/A	N/A	N/A
10	20221BBA0345	Sriharsha .S.H	N/A	N/A	N/A	N/A
11	20221BBA0350	JAHNAVI D N	22-Dec-20	14:49	14:52	20
12	20221BBA0370	Harsitha Chennaboina	N/A	N/A	N/A	N/A
13	20221BBA0383	vasavi gr	22-Dec-20	14:19	14:23	18
14	20221BBE0001	AMAN MANOJ GUPTA	22-Dec-20	13:17	13:25	17
15	20221BBE0002	laiba mani	22-Dec-20	13:08	13:16	19
16	20221BBE0003	Mahisudhan S	N/A	N/A	N/A	N/A
17	20221BBE0004	ADIMULAM VENKATA SA	22-Dec-20	16:26	16:38	14
18	20221BBE0005	Roshan P S	22-Dec-20	14:11	14:19	18
19	20221BBE0006	OOMMEN JOHN AEZAL	N/A	N/A	N/A	N/A
20	20221BBE0008	R SRIHARI	N/A	N/A	N/A	N/A
21	20221BBE0009	Gurupreet Walia	22-Dec-20	14:13	14:20	19
22	20221BBE0010	DHARANIDHARAN D	22-Dec-20	14:14	14:20	17
23	20221BBE0012	PAINTHAMIL RAJA KARU	22-Dec-20	14:25	14:28	19
24	20221BBE0013	BADI PAVAN SAI	22-Dec-20	16:26	-	N/A
25	20221BBE0013	BADI PAVAN SAI	22-Dec-20	16:27	-	N/A
26	20221BBE0013	BADI PAVAN SAI	22-Dec-20	16:33	16:42	15
27	20221BBE0014	LAKSHMI S	22-Dec-20	14:49	14:53	20
28	20221BBE0015	MUHAMMED LEHAL N V	22-Dec-20	14:34	14:38	15
29	20221BBE0019	MOHAMMED ZAID	N/A	N/A	N/A	N/A
30	20221BBE0020	Muhammed Amreen	N/A	N/A	N/A	N/A
31	20221BBE0022	BHARATULA JYOTHI SRI	22-Dec-20	14:21	14:26	17
32	20221BBE0023	MOHAMMED HUZAIF	22-Dec-20	14:21	14:27	16
33	20221BBE0024	DINESH G .	N/A	N/A	N/A	N/A
34	20221BBE0025	R VIKAS SEERVI	22-Dec-20	14:24	14:28	14
35	20221BBE0027	K KUSHAL KUMAR	N/A	N/A	N/A	N/A

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36	20221BBF0019	Diya Rai	22-Dec-20	14:31	14:33	19

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Presidency University

Assessment Summary Report

CHE , Semester 1 SEC-02cc

From : 22-Dec-2022 13:00 (hr) **To** : 22-Dec-2022 16:45 (hr)

Subject Code : CHE1019

Subject Name : Fundamentals of Environment Studies Faculty name : Saravanan C .

Assessment Name : Quiz

S.No.	Roll No.	Student Name	Score 1	BestScore
1	20221BAV0087	Divyanshu Jamaiyar	14	14
2	20221BBA0005	SHRI HARI K	17	17
3	20221BBA0008	Krrish Khullar	16	16
4	20221BBA0028	Abhi Sarraf	16	16
5	20221BBA0045	Gauri Nair	16	16
6	20221BBA0047	Suman Roy	18	18
7	20221BBA0081	HARPAL MIRAL PARESH	15	15
8	20221BBA0099	Hitansh Jain	9	9
9	20221BBA0104	MOHAMMAD RAZZAQ	18	18
10	20221BBA0106	SAMRIDDHI MITRA MANNY	12	12
11	20221BBA0107	Chris Jiju .	13	13
12	20221BBA0109	Pradeep S	18	18
13	20221BBA0117	ANANYA KUMARI	10	10
14	20221BBA0128	TANEESHA L JADWANI	19	19
15	20221BBA0140	Abilash S .	17	17
16	20221BBA0141	GANGADHAR C ITTANGI	8	8
17	20221BBA0143	Janvi Agarwal	11	11
18	20221BBA0146	KHUSHI BHOTIKA	11	11

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S.No.	Roll No.	Student Name	Score 1	BestScore
19	20221BBA0156	KANAKAMAMIDI JASHWANTH REDDY	17	17
20	20221BBA0184	Abhinav Kashyap	14	14
21	20221BBA0191	Liya .	18	18
22	20221BBA0192	Umang Adil	10	10
23	20221BBA0202	BHAVANIPAL SINGH RATHORE	17	17
24	20221BBA0236	Gourav Yadav	15	15
25	20221BBA0242	GUTHA MAHESH	20	20
26	20221BBA0259	KURUMAVIDI SHAIK SALEHA	20	20
27	20221BBA0260	Srijita kayal	12	12
28	20221BBA0261	VALLAMSETLA LAXMI CHANDANA	14	14
29	20221BBA0262	Saurabh Singh	18	18
30	20221BBA0306	Lavanya G.	8	8
31	20221BBA0316	PEDDAPAPI REDDI GARI LOHITHA REDDY	20	20
32	20221BBA0319	PAVAN KUMAR SAYANA	18	18
33	20221BBA0362	ATHARV KUMAR JHA	18	18
34	20221BBA0394	Tushar karmakar	17	17
35	20221BBB0049	Muhammed Nihal	17	17
36	20221BBD0058	DHRUTHI CHOUDARY K	17	17
37	20221BCH0075	Charishma Pathapati	18	18

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