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20-11-22

Name: Jadhav Kundan Bhanu

College name: Shivaji Mahavidyalaya S.O

class: B.Sc I sem

Subject: physical chemistry

Semester: II nd

Q1 Explain in detail Bohr's atomic model.

The Bohr's theory based on the planck's quantum theory and it explain the new model of atom which over come the drawback Rutherford atomic theory. He gave five postulat to explain

- Atomic structure:

Postulates of Bohr's Atomic theory

1) Electron travels around the nucleus in a fixed permanent and is known other electron in such orbit different energy and at fix distance from the nucleus the orbits are given the letter electrons n is each number n=1, 2, 3, ... or K, L, M, N as the distance of nucleus increases.

2) While in this specific orbit and electron does note radiate or less energy. Inside of these orbit the energy of electron and does of since that is higher losses or gain energy. Hence, the specific orbit exist electron an atom are refer to as Stable or simple energy level.

3) An electron can move from an energy level to another by atom or photon quantity only.

- When electron recide of loss or gain that is ground state one jump in the higher excited stage by applying energy.

4) The angular momentum of an electron orbiting around nucleus is an integral multiple plank constant divided by 2π that is

$$\text{Angular momentum } mvr = \frac{nh}{2\pi}$$

Where

m_e is the mass of electron

v is the velocity of electron

r is the radius of orbit

n is the Quantum number 1,2,3

h = is the plank Constant.

- Drawbacks of Bohr's atomic theory

i) It fails to explain the atomic spectrum of elements Consting more than one electron

ii) The indivial lines in hydrogen spectrum in hyper fine spectrum could not explain by Bohr's theory.

iii) It fail to explain the splitting of atomic Spectral line (orbital Spetal) in presence of magnetic fie (zeeman effect) and electrical electric fild (Stark effect)

Orbital	orbital
s	
p	
d	

Q: Derive an expression for velocity & energy of an electron

Velocity of an electron

The radius of bohr's orbit is $\frac{n^2 h^2}{4\pi^2 m e^2 k}$

This is called as induced dipole & Hyper interaction having very short time period that is temporary

It is very weak type of forces of attraction

Medium

Medium

5) Define the following terms & give its unit
1. Surface tension

The force in dynes acting along the surface of liquid at right angle to any line 1cm in length

It is force in type in dyne acting along the surface of liquid at right angle to any one centimeter (1cm) in length is known as surface tension

It is physical property of liquid which are exist due to the intermolecular forces of attraction between the liquid molecules the molecules which is a present middle or inner most part of the liquid is attraction equally in all direction by molecules which is at the surround it that is same and of the forces take place But the molecule which is at the surface is not a molecule in all direction there is a only down word force acting in it hence single molecule is pulled in inward direction there then is a theory of each molecule

$E_n = -\left(\frac{2.178 \times 10^{-18}}{n^2}\right)$

The value of energy of an electron in electron Volt is

$E_n = \frac{-13.595 \text{ evolem}^{-1}}{n^2}$

According to the electron in the ground state is and in excited state of higher energy is

$E_{n_2} = \frac{2\pi^2 me^4}{n^2 h^2}$

$E_{n_1} = \frac{2\pi^2 me^4}{(n_1)^2 h^2}$

$\Delta E = E_{n_2} - E_{n_1} = \frac{2\pi^2 me^4}{n^2}\left(\frac{1}{n_1^2} - \frac{1}{n_2^2}\right)$ — ①

By according to the plank constant theory

$\Delta E = h\nu = \frac{hc}{\lambda}$ — ②

c is velocity of light

from equation ① & ②

$\frac{hc}{\lambda} = \frac{2\pi^2 me^4}{n^2}\left(\frac{1}{n_1^2} - \frac{1}{n_2^2}\right)$

The molecules layer in contact with solid surface has a velocity of the successive layer about it move with increasing higher velocities in the direction of the flow.

- Unit of viscosity

Viscosity is denoted by letter η in CGS system its unit is gm cm^{-1} sec^{-1} called poise

10^{-2} = centipoise

10^{-3} = millipoise

SI unit of viscosity is kgm^{-1} s^{-1}

1 poise = 1 gm cm^{-1} s^{-1}

- Promoter

1) change of lattice spacing - the lattice spacing of the catalysis is changed thus enlarging the spaces between the catalyst particles this real molecules of the reaction can diffuse through & broken. This make the surface greater

2) Increase in number of peaks & cracks the presence the promoter increase the number of peaks & cracks on the catalyst surface this molecules and Hence the rate of reaction the phenomenon of promoting is common characteristics of heterogeneous catalysis.

Ex:- The optimum temp of enzymatic reaction occurring in human body at 37°C or most higher temp. at physiological reaction is 40°C due to the slightly high body temp (fever) is very dangerous.

(c) The rate of enzyme catalyst reaction is maximum is optimum pH.

Enzyme are specifically inhibited or poisoned.

Ex: (a) Body function is a best at pH 7.4 the pH of blood and body fluid is along at 7.

(b) Heavy metal ion such as mercury Hg^{2+} Ag^{2+} metal with SH group of enzyme and pas poison it.

(c) Catalytic activity of enzyme is greatly enhanced by the presence of activators or Promoter.

Activator such as Na^{+}, Mn^{2+}, Cu^{2+} Promote Catalytic action of enzyme by bounding that is Vitamin Co-enzyme.

volume of 1 drop of liquid = $\left(\frac{V}{n_1}\right)$ —(5)

where d_1 is density of liquid 1 and n_1 is no. of drop of liquid 1 = $\frac{V}{(V/n_1)d_1}$ —(6)

By comparing equation — (5 & 6)

$$\frac{\eta_1}{\eta_2} = \frac{(V/n_1)d_1}{(V/n_2)d_2}$$

$$\therefore \frac{\eta_1}{\eta_2} = \frac{n_2 d_1}{n_1 d_2}$$

By using this equation the surface tension of given drop liquid number method.

Q6 What is enzyme (catalyst) and give the characteristics of enzyme catalyst reaction?

* Enzyme Catalysis

The chemical reaction which occurs in the body of plants and animal (living organism) slowly and catalyzed by the organic compounds one called as enzyme and catalysis brought about by enzyme is known as enzyme catalysis.

Each enzyme produce in a particular living cell to controlled reaction occuring in that cell.

1) Inversion of cane sugars by invertase present in yeast.

Eg: H_2SO_4 Enzyme → $C_6H_{12}O_6$ → C_2H_5OH
Glucose Enzyme

a) Conversion of glucose into ethanol by Zymase present in yeast.

$C_6H_{12}O_6 \xrightarrow{\text{Zymase}} 2C_2H_5OH + 2CO_2$

b) Characteristics of enzyme Catalytic reaction

Δ Enzyme are most efficient Catalyst than inorganic Catalyst.

This Catalyst Enclonate the rate of reaction with high as compare with inorganic substance thus one molecule of enzyme may transform million molecule of reactant Enzyme lower the activation Energy

2) Enzyme are very specifically activated to the reaction molecules.

Ex:- ⑤ Lipase Catalyse the hydrolysis of lipid and Trypsin other amylase has enzyme absolute specificity.

3) Enzyme can active one optical isomer but not activate to other isomer that is it is evolved five from dextrorotatory and exe from levorotatory.

→ Rate of enzyme Catalyzed reaction is maximum at optimum temp.

Where k = is Constant that is temperature
coefficient
T_c = Critical temp.
T = any other temp

$\left(\frac{M}{\rho}\right)^{2/3}$ = Supposed molar surface energy of Liquid

fig :- Stalagmometer

The surface tension of any liquid can be measure with the help of stalagmometer which consist of long glass tube having capillary at the end of stalagmeter it also have upper & lower mating with the help of stalagmeter the surface tension of liquid can be measure by two methods

Drop number Method:

By counting the number drops of two different liquid of the same in normal of same volume

Let's n_1 & n_2 be the number of drops by the same volume of two liquid

Volume of 1 drop of liquid 1 = $\left[\frac{V}{n_1}\right]$ ——— (1)

stait of parameter.

Q5 What is the effect of temperature on surface t
sion and explain the determination of surfa
tension by drop number method?

* Effect of temperature on surface tension

Generally temperature increase than the surface tension also decreases that is $\gamma \propto \frac{1}{T}$
Because when temperature increase then kinetic energy of liquid molecules is also increases

$KE \propto T$

Intermolecular force of attraction is decr
ases and hence inward foling force decreases
Surface tension decreases

$$\gamma \left(\frac{M}{\rho}\right)^{4/3} = k\,(T_c - T - 6)$$

This equation show the relationship betwe
temperature & surface tension

Hence the same as water drops also spherical in shape to minimise surface area.

Water drop

Inward pulling

In the capillary tube or any vessel the free liquid can't move due to the presence of surface tension.

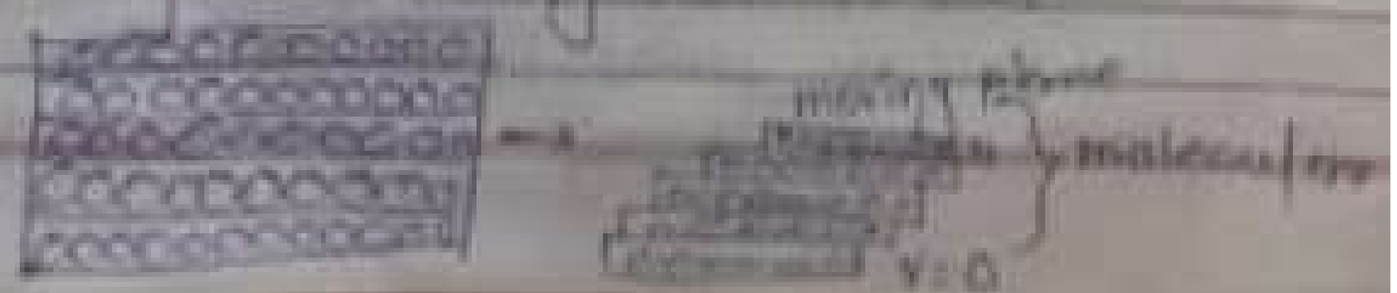
- Unit surface tension:

The surface tension is denoted by σ. In CGS system the unit of surface tension is dyne per cm (dyne/cm) in SI system the unit of surface tension is Newton per meter (N/m).

2) Viscosity

Viscosity of liquid is a measure of its frictional resistance.

A liquid may considered to be a molecular layer arranged on over other when shearing force is applied to a liquid it flows. However the force of friction between the layer offer resistance to this.



$$\frac{1}{\lambda} = \frac{m^2 \varepsilon_0 h}{n^2 e} \left(\frac{1}{n_1^2} - \frac{1}{n_2^2} \right)$$

or

$$\frac{1}{\lambda} = R \left(\frac{1}{n_1^2} - \frac{1}{n_2^2} \right)$$

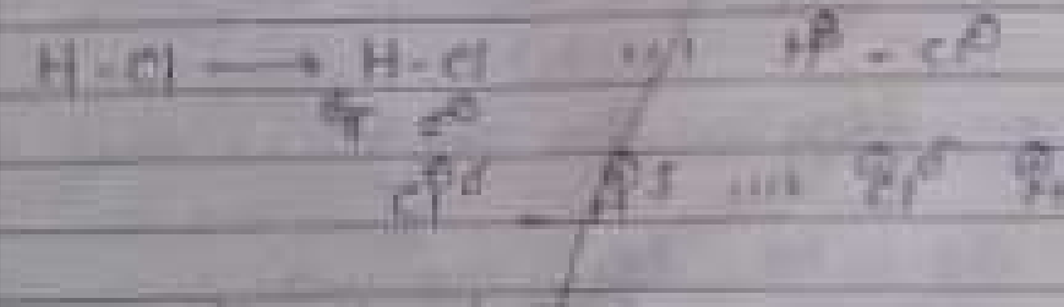
Volume of one can be calculated
i.e. m, h, n, e

Q.) Explain in detail the intermolecular forces present in liquid state.

Intermolecular force interaction in liquid state:

1) Dipole dipole interaction

A polar attraction like HCl has a particle ⊕ve & ⊖ve charge at the end. Hence the ⊕ve and attract ⊖ end of dipole & Here lose the attractive forces from the liquid due to the two different process is known as dipole-dipole interaction



2) London-London forces of attraction:

The weak forces between non-polar molecule or atom in which the electronic force of attraction present between the nucelus of one atom with electron of the atom with the electron of the other atom

Topic

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Date

शिक्षणी अभ्यासक्रम शिस्त अंतर्गत

भरणी सुलभीकरण प्रक्रिया 2022

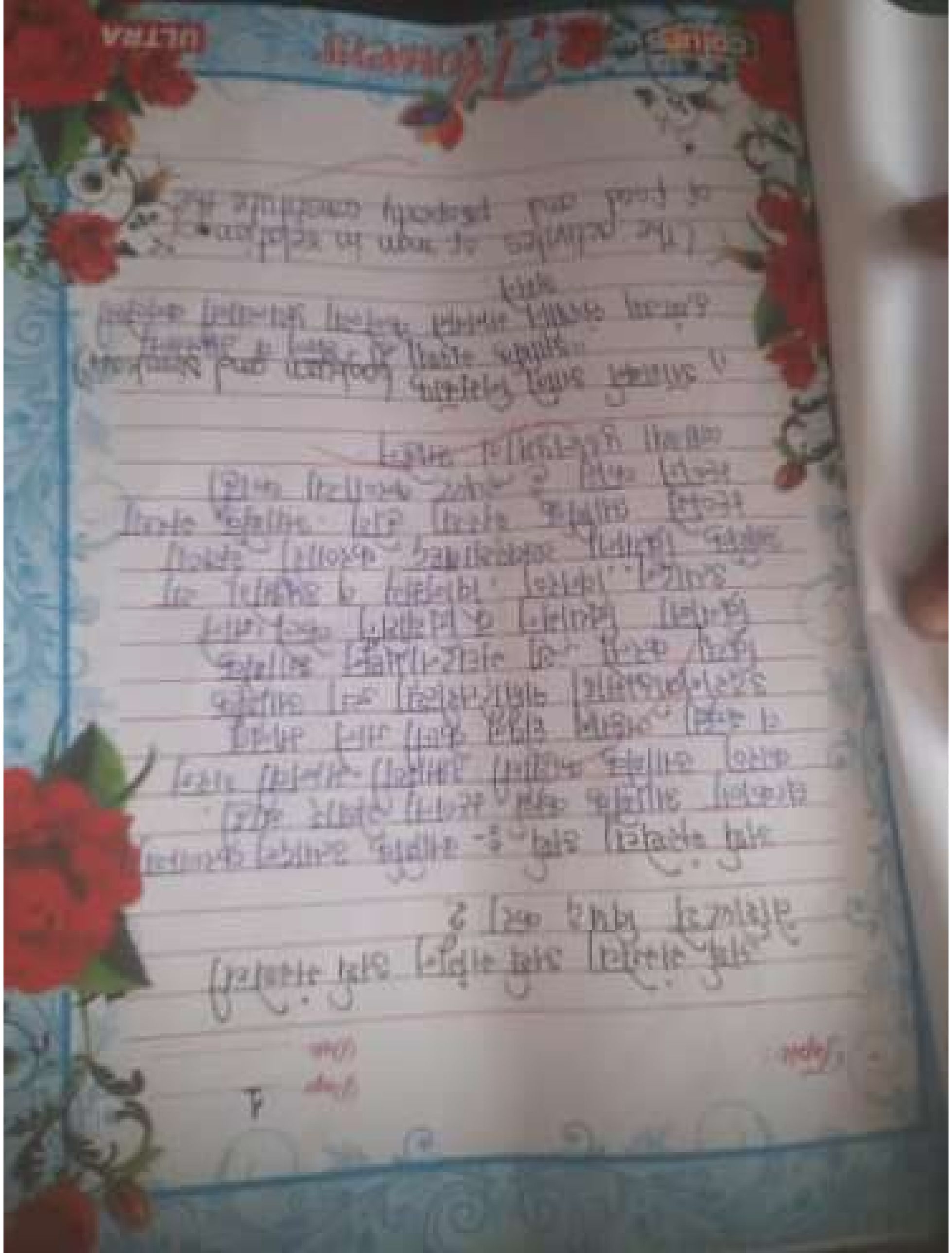
वर्ग - B.A. Ey (Sem. I)

विषय - अर्थशास्त्र

पेपर - समकालीन भारतीय समाज (IV)

नाव - पूजा अलंकार भिंगारकर

शैक्षणिक वर्ष : 2021-2022



आर्थिक संघटन म्हणजे

१) डॉ. मुजुमदार आणि डॉ. मदन (Dr. Mujumdar and Dr. Madan) यांच्या मते, "आर्थिक संघटन म्हणजे मानवी गरजा पूर्ण करण्यासाठी आवश्यक असलेल्या साधनांचे नियोजन आणि मानवी प्रयत्नांचे समन्वय होय."

(Economic organisation consists of the ordering and organisation of human relations and efforts in order to procure as many of the necessities of day life as possible with the expenditure of minimum effort.)

एन. जे. स्मेलसर (N. Smelser) -

"आर्थिक विषय हे विविधतेने संपन्न आहे असा उद्योग, वस्तू व सेवा यांचा उत्पादन व वितरणाची संस्थात्मक रचनेचा समावेश करतात व अशा संस्थांचा अभ्यास करतो."

(The economy comprises the structure and processes of producing and distributing scarce goods and of those services that are amenable to allocation and exchange.)

ULTRA

B.Sc (T.Y.) Physics

Name :- Vaishnavi Pramod Mudge

Assignment - Topic

Q.1 Explain the normal Zeeman effect with experiment and types:

→ The splitting of spectral lines of atom into two or three components in the magnetic field is called "Normal Zeeman effect"

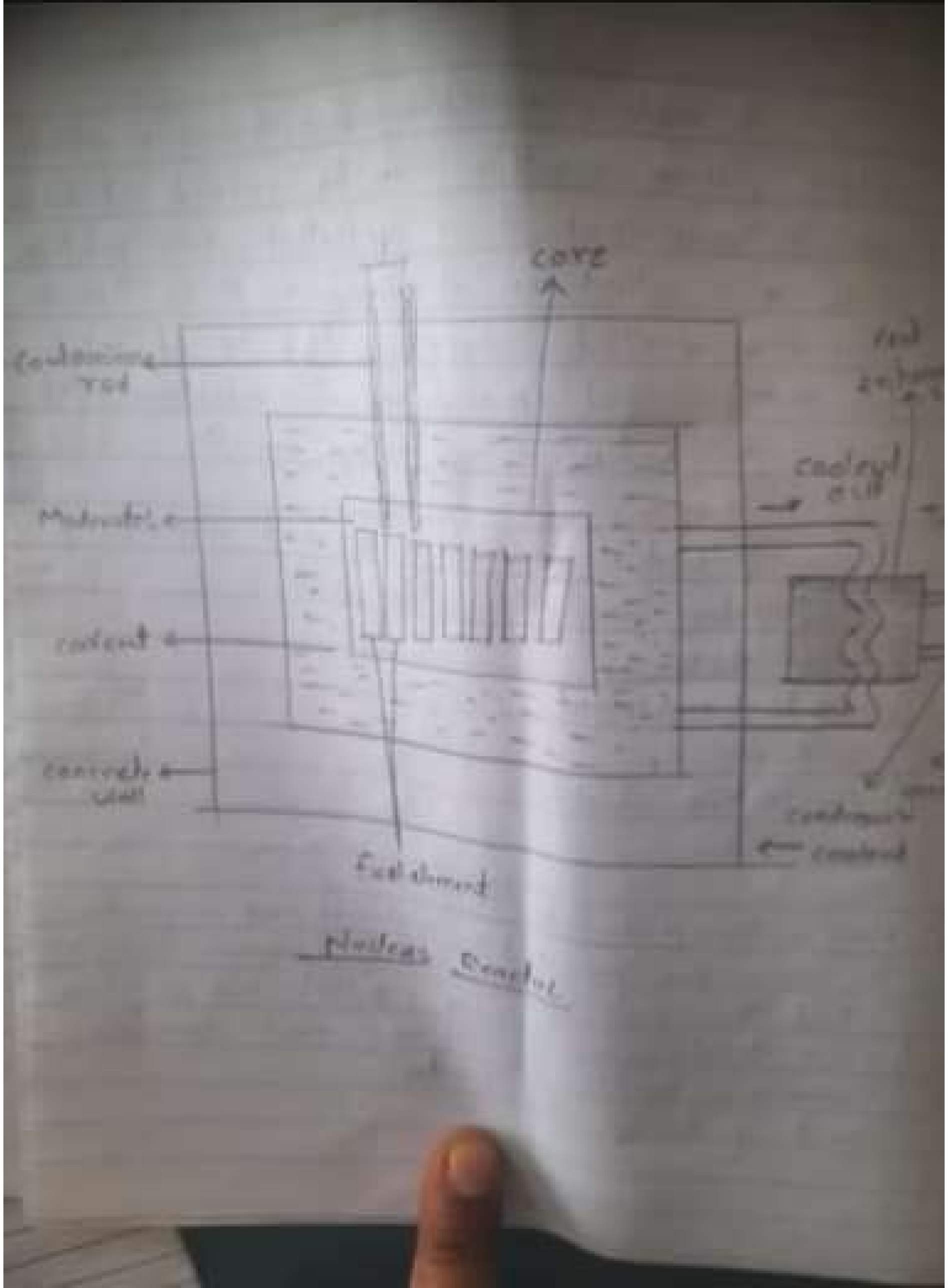
Experiment arrangement for "Normal Zeeman effect"

The experimental arrangement as shown in fig (a) mm is an electromagnet capable of producing a magnetic field B. Conical pole pieces (pp') have longitudinal holes drilling through them. A source of light (L) emitting the spectrum is placed between the pole pieces. The spectral lines are observed with the help of spectrometer of high resolving power.

The normal Zeeman effect may be observed in two ways

① Longitudinal view

② Transverse view


core
Control rod
Moderator
coolant
Control rod
Fuel channel
Pressure Container

2) Longitudinal view :→

The position of the spectral line is noted without applying the magnetic field. The magnetic field is now switched on. The spectral line is viewed longitudinally through a hole drilled in the pole piece parallel to the direction of the magnetic field. It is found that the spectrum line is split into two components : one slightly shorter in wavelength than the original line & the other is slightly higher (longer) in wavelength than the original line. The original line is not present. The two components are found symmetrically situated about the position of the parent line. Analysing the spectral lines with the nicol prism. Both lines are found to be circularly polarised in opposite directions. This is called longitudinal normal Zeeman effect.

Physics assignment

Name: Sapana Bohara

Shreenagar Mahavidhalaya Sirsia (A)

Page No. Date:

Explain Maxwell-Boltzmann distribution law

Suppose the particles are distributed among k energy level $E_1, E_2 \ldots E_i \ldots E_k$

Let $n_1, n_2 \ldots n_i \ldots n_k$ be the number of dependent quantum state associated with the energy levels according to the classical basic postulate

$N = n_1 + n_2 + \ldots + n_i + \ldots + n_k = \sum n_i$ ... (1)

and since the chance of interaction between particles are negligible

the total

$U = n_1E_1 + n_2E_2 + \ldots + n_iE_i + \ldots + n_kE_k$

$\therefore \sum n_iE_i \ldots$ (2)

Taking diff of eqn (1) & (2) we have

$dN = \sum dn_i = 0$ —— (3)

$dU = \sum E_i dn_i = 0$ —— (4)

The set of occupation number $n_1, n_2 \ldots n_k$ is possible mode of distribution of the particles among the energy level & it determines a macrostate of the system according to the fundamental postulate of equal a priori probability all the quantum state of energy of the particles in the system in equilibrium corresponding to the constant value of U & if is one equally probable it means that in the equilibrium state the distribution of the

Student's Signature

particle among various quantum state has the maximum probability of occurrence this distribution can optimal in a maximum no of statistically independent ways therefore we can count the total no of independent way which distributing the particles among the quantum state corresponding to the set of numbers $n_1 n_2 \ldots$ & then determine the set N_0 which W is maximum.

6. Explain Bose Einstein Distribution law?

→ Bose used planck's hypothesis according to which radiation in a heat enclosure are composed of light quanta known as photons each of energy $\epsilon = h\nu$ these photons in the enclosure are indistinguishable

Basic postulates

1) The particles of the system are identical & indistinguishable
2) Any number of particles can occupy a single cell in the phase space
3) The size of the cell cannot be less than h^3 where h is planck's constant ($h = 6.627 \times 10^{-34}$ Joule sec)
4) The no of phase space cell is comparable with the no of particles i.e the occupation index $f(\epsilon_i)$ is $\frac{n_i}{g_i} < 1$
5) Bose-Einstein statistics is applicable to particles with integral spin angular momentum in units of $\frac{h}{2\pi}$ on fermions

Both are B-E statistics are known as Bosons

Here g_i the actual number of boxes in which n_i particles are to be distribution in g_i cells in the i^{th} compartment

$$W_i = \frac{(n_i + g_i - 1)!}{n_i!(g_i - 1)!} \quad \text{---- (1)}$$

Similar expressions will be obtained for other compartments therefore the total No. of different arrangement for all them particles of the system gives thermodynamic probability

$$W(n_1, n_2 \cdots n_i \cdots n_k) = \frac{(n_1 + g_1 - 1)!}{n_1!(g_1 - 1)!} \times \frac{(n_2 + g_2 - 1)!}{n_2!(g_2 - 1)!} \times \cdots \times \frac{(n_i + g_i - 1)!}{n_i!(g_i - 1)!} \times \cdots \times \frac{(n_k + g_k - 1)!}{n_k!(g_k - 1)!}$$

$$\prod_{i=1}^{k} \frac{(n_i + g_i - 1)!}{n_i!(g_i - 1)!}$$

where Π denotes multiplication of terms (product over) for various i ; from $i = 1$ to k

∴ The probability of the head may come up is 1/2 probability that the tail may come up is also 1/2

∴ an probability of any one face to come up is 1/6 the set of all possible out comes can be written as S(1,2,3,4,5,6)

The probability of the die coming up with an even number is 3/6 as there are only three even number on the die

2,4,6 P(even) = 3/6 = 1/2

If a is the head case in which an event occurs & b the number of cases in which an event fails then probability of occurrence the event

= $\frac{a}{a+b}$ and

probability of failing the event = $\frac{b}{a+b}$

physics assignment -

Page No. Date

Explain permutations and combinations ?

→ The word permutation means arrangements and combination means formation of group

permutation :- To understand meaning of permutation ie arrangement let us consider an example of four distinguishable objects marked a bc and d taking any two objects at a time. the possible arrangements are ab ba ac ca and ad da bc cb bd db cd dc

there are total 12 arrangement possible In arranging these objects the order of their placing is also taken into consideration thus ab and ba are two different permutation thus 4 objects can be arranged in 12 ways by taking 2 objects at a time i.e the no of permutation is 12

symbolically $^4P_2 = 12$

In general the no of arrangement of n distinguish able objects by taking r at a time is given by

$$^nP_r = \frac{n!}{(n-r)!} \quad \text{---(1)}$$

there $^4P_2 = \frac{4!}{(4-2)!}$ Teacher's Signature $\frac{4\times3\times2\times1}{2\times1}$

Physics assignment -

Page No. Date

Q3 Explain probability ?

→ The probability of an event may be defined as the ratio of the number of cases in which the event occurs to the total number of cases

Thus the probability of an event =

number of cases in which the event occurs

total no of case

Suppose an event can happen in a ways & fails to happen in b ways then the probability of happening the event = $\frac{a}{a+b}$

& the probability of failing the event = $\frac{b}{a+b}$

Here (a+b) represent the total no of equally likely possible ways it should be noted that the sum of these two probabilities is always 1 since the event must either occur or fail

To evaluate the probability of random event we consider a unit of measurement An event is called as sure event if it occurs in an experiment thus the probability of a sure event is assumed to be equal to 1 & that of an impossible event to be equal to 0 thus the probability p of a random event will be in the interval

$0 \leq p \leq 1$

(22)

physics assignment

Page No. Date

Consider a system containing N independent indistinguishable particles.
Let there be $n_1, n_2 \cdots n_i \cdots n_k$ particle having mean energy value $E_1, E_2 \cdots E_i \cdots E_k$ resp in compartments numbers are $1, 2 \cdots i \cdots k$ containing $g_1, g_2 \cdots g_i \cdots g_k$ cells such that the total number of particles in system

$N = n_1 + n_2 \cdots + n_i \cdots + n_k$

Now consider the compartment i has n_i indistinguishable particle distributed among its g_i cells suppose that n_i particles are arranged in a row & partitioned among g_i quantum state with $(g_i - 1)$ partitions between the total $(n_i + g_i - 1)$ possible arrangement of particles and partitions is equal to the total number of permutations is $(n_i + g_i - 1)$ objects in row

∴ the total possible no. of arrangements n_i particles with $g_i - 1$ partitions $(n_i + g_i - 1)$

As the particles are indistinguishable the rearrangement of particles among themselves will not give rise to any new distribution the only such meaningful permutation is $n_i!$ because meaningless permutation is also do not produce different state and hence are permutable above result is further divided by $(g_i - 1)!$

Physics Assignment -

Exp. No. Page No. Date

Consider a system containing of N dependent indistinguishable particles.

Let there be $n_1, n_2 \cdots n_i \cdots n_k$ particle having mean energy value $E_1, E_2 \cdots E_i \cdots E_k$ resp in compartments numbers $1, 2 \cdots i \cdots k$ containing $g_1, g_2 \cdots g_i \cdots g_k$ cell resp

In the the total number of particles in system,

$$n = n_1 + n_2 \cdots + \cdots + n_i + \cdots + n_k$$

Now consider i^{th} compartment in this n_i indistinguished particle distributed among its g_i cells suppose that n_i particles are arranged in a row & distributed among g_i quantum state with $(g_i - 1)$ partitions between the total no of possible arrangement of particles and partitions is equal to the total number of permutations of $(n_i + g_i - 1)$ objects in row

The total possible ways of arranging n_i particles with $g_i - 1$ partitions $(n_i + g_i - 1)$

As the particles are indistinguishable the rearrangement of particles among themselves will not give rise to any new distribution the most such rearrangement permutation is not known as meaningless permutation is also do not produce different state and hence are meaningless the whole result is further divided by $(g_i - 1)$

Teacher's Signature

Protective Shield →

A protective shield is the fo
a concrete thick wall surrounds the reacti
of the reactor to save the person work
around the reactor form the hazardous
radiations

Moderator →

Moderator is used to slow down the fas moving neutron. Most commonly used moderators are graphite & heavy water. But Heavy water is the best moderator.

③ Control system or material →

Control material is used to con- -trol the chain reaction & to maintain a stable rate of reaction. This material controls the no. of neutrons available for the fission for ex. cadmium rods are inser- -ted into the core of the reactor, because they can absorb the neutrons. The neutrons available for fission are controlled by moving the cadmium rods in or out of the core of the reactor.

④ Coolant →

Coolant is a cooling material which removes the heat generated due to fission in the reactor commonly used coolants are water and nitrogen.

Transverse View →

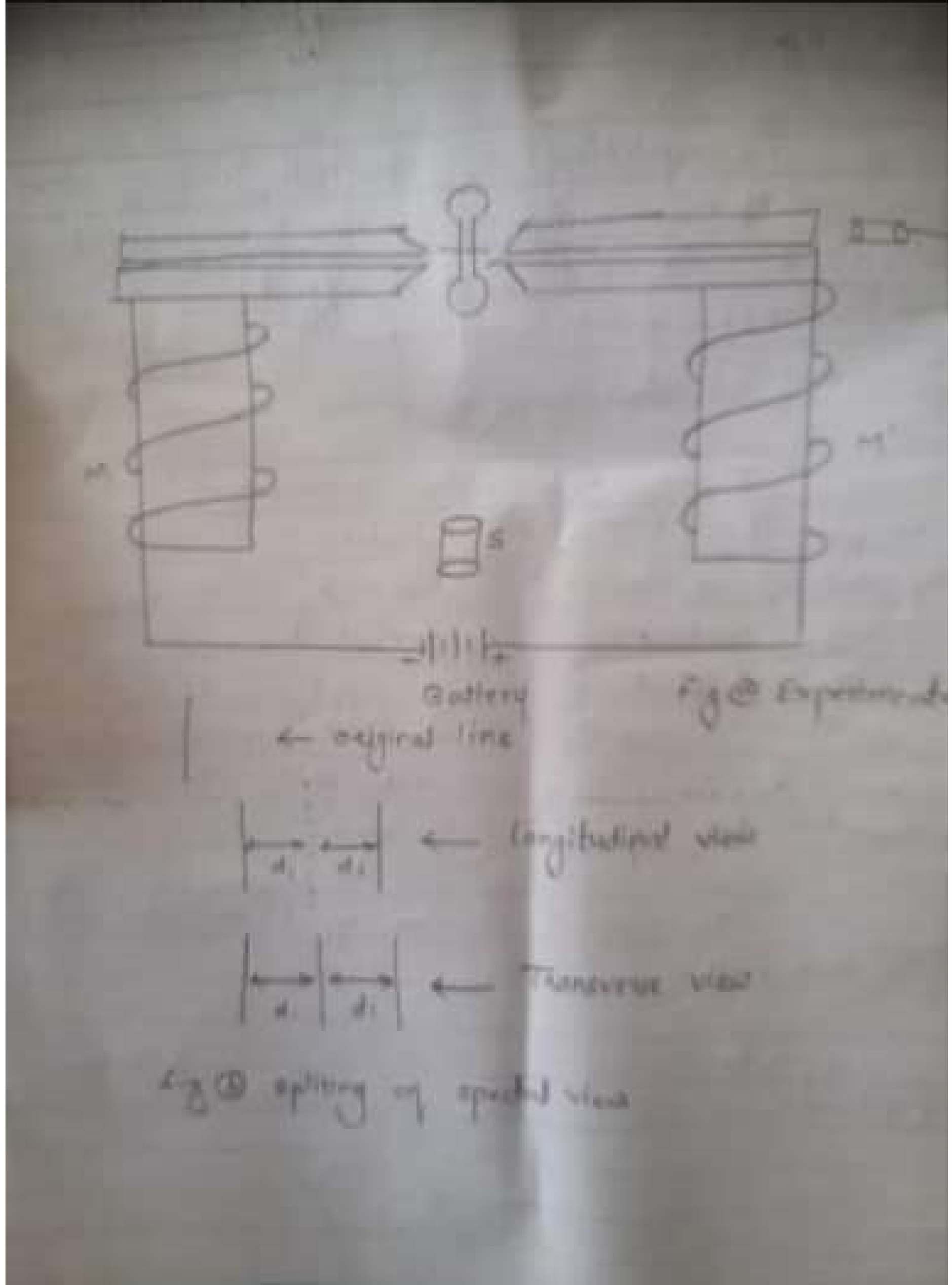
The spectral line is view transv
i.e. ⊥r to the direction of the magnetic field.
this case the single spectral line is split up
3 components when the magnetic field is app
The central line (parent) has the same wave
-length & is plane polarised with vibrations
parallel to the field. The displacement of t
either outer line from the central line are al
plane polarised having vibration in the
direction ⊥r to the field. This is called as
Transverse normal Zeeman effect.

Explain the nuclear reactor

A nuclear reactor is a device in which nuclear fission reaction can be carried out through a sustained & controlled chain reaction. It is also called an atomic pile. It is thus a source of controlled energy which is utilized for many useful purposes. A nuclear reactor set up shown in following fig ⊙

Nuclear reactor consist of 5 main elements
① Fissionable material called fuel
② Moderator
③ Control material
④ Coolant
⑤ Protective shield

① Fissionable material (Fuel) :-
The fissionable material used in reactor called the fuel of the reactor. Uranium isotope (U^{235}) thorium isotope (Th^{232}) and plutonium isotope (Pu^{239}, Pu^{240}) are most commonly used fuels in the reactor.


S
Battery
← original line
← Longitudinal view
← Transverse view

Topic

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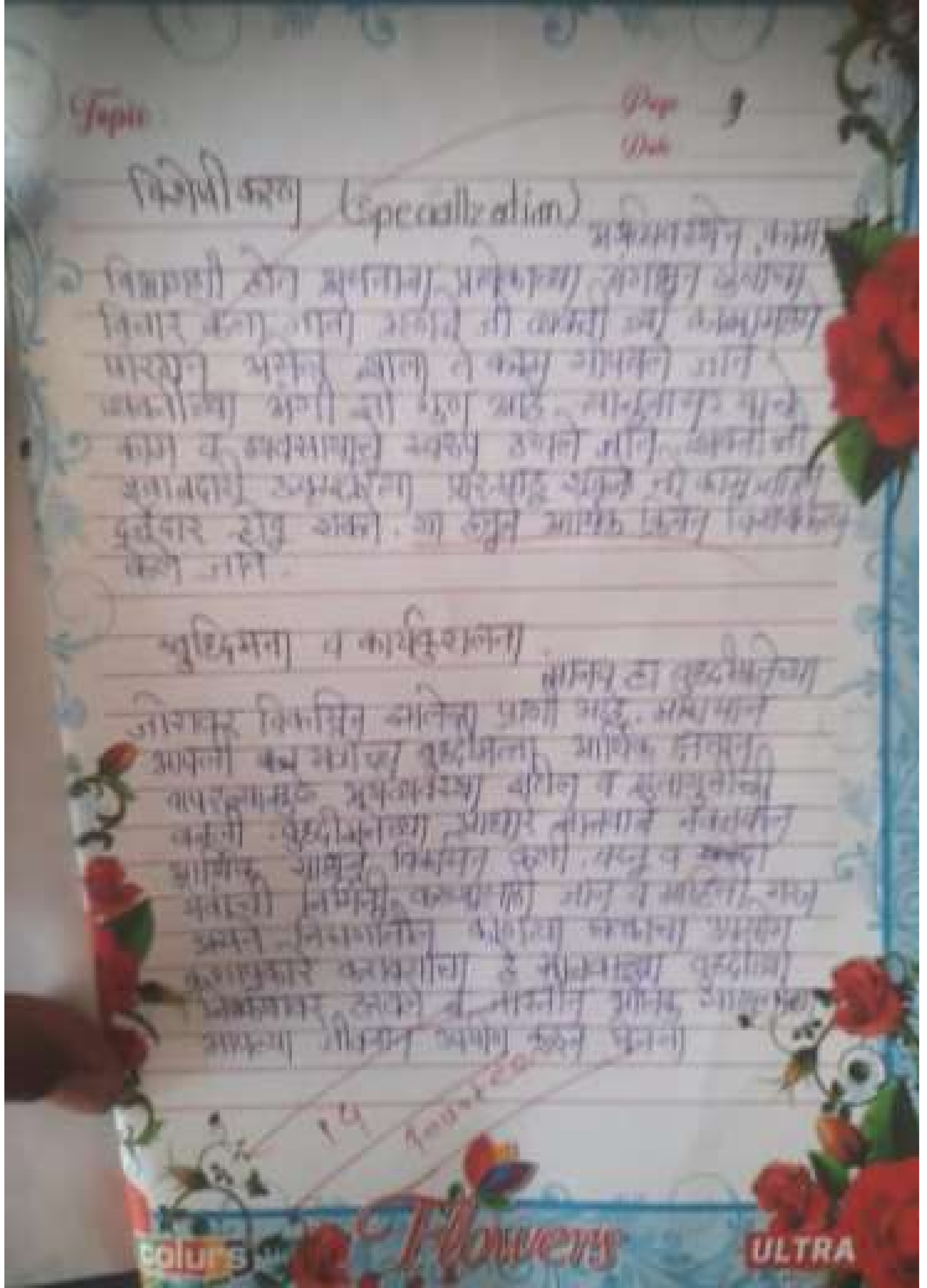
विशेषीकरण (Specialization)



2) रुथ बनझेन (Ruth Bunzen) "आर्थिक
व्यवस्था ही लोकांच्या गरजा भागविण्यासाठी
मानवी कल्पनांचे जे व्यापक स्वरूप आपण
स्वीकारतो."

(Economic system designed to satisfy the needs of the people is to organize production to control disputes and to determine the rights and claims of ownership within the community.)

वरील व्याख्यांवरून असे लक्षात येते की
आर्थिक संस्था ही व्यक्तींच्या मूलभूत गरजा
आहेत. त्या गरजा भागविण्यासाठी विविध प्रकारच्या
आवश्यक वस्तूंचे उत्पादन, त्यांचे वितरण
आणि त्यांचा उपभोग यांच्याशी संबंधित
असतात. या संस्थांचे स्वरूप हे त्या समाजातील
लोकांच्या मूल्यांवर, श्रद्धांवर, परंपरांवर,
कायदे, धर्म, राजकीय व्यवस्था यांवर अवलंबून
असते. त्यामुळे आर्थिक संस्थांचे स्वरूप
सर्वत्र सारखे नसते. ते वेगवेगळ्या
देशांत, वेगवेगळ्या काळात भिन्न असते.

Topic

3) रुथ बनझेफ (Ruth Benzef) "आर्थिक
आणि लोकशाही नियोजन असलेल्या समाजांचा अंदाजित
मानवी वर्तनाचे जे समाज व्यवस्थेत समर्थ स्वरूप असलेला
असतात."

(Economic system designed to
satisfy the materis of the people is to
maximize production to control distaubes
and to determine the rights and claims
of ownership within the community)

वरील व्याख्यावरून आपले असे होते की
आर्थिक व्यवस्था ही [illegible] आहे
आहेत प्रकार समाज कोणी किंवा अनेक समान
आहेत वर्तनाचा मानवी जीवनावर प्रभाव
[illegible] आवश्यकता ही फक्त आर्थिक
[illegible] असतात नाही तर धार्मिक, सामाजिक
सांस्कृतिक व राजकीय [illegible] परिणामस्वरूप
[illegible] जाणतो जाते आर्थिक वस्तूंचा उपयोग
[illegible] मानव जीवन [illegible] मूल्यांकन
[illegible] स्वरूप यांच्या [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible]

प्रा. के. डेव्हिस (Prof. K. Davis)

"आदिम अथवा सुसंस्कृत कोणत्याही समाजात, दुर्मिळ वस्तूंचे उत्पादन, वितरण व विनिमय यांचे नियमन करणारे मूलभूत कल्पना, रूढी आणि दर्जा यांना आपण आर्थिक संस्था असे म्हणतो.

("The Basic ideas norms and set status which govern the allocation of scare goods in any society whether the primitive or civilized. we call it economic institution")

थोडक्यात आर्थिक गरजांशी निगडीत असलेले प्रस्थापित [illegible] महत्वाचे आर्थिक संस्था होय. [illegible] निगडीत [illegible] एक संस्था होय. [illegible] जीवन [illegible] एक व्यवस्था आहे [illegible] आर्थिक [illegible] कार्यपद्धती [illegible] आर्थिक [illegible] व्यवस्था [illegible]

Topic Date

economic institution) - Ogburn and Nimkoff

३) मार्शल जोन्स (Marshall Jones)

"जीवन निर्वाह विषयक क्रियांशी परिपूर्तीसाठी पर्यावरणाचा उपयोग करण्याशी संबंधित ज्ञानाची, रूढी-कल्पना यांचा एकत्र प्रभाव म्हणजे आर्थिक संस्था असे म्हणतात.

The activities of man in relation of food and property customs relating to the exploitation of the environment for the satisfaction subsistence needs) Marshall Jones.

विल्मा आणि हेडिंगर - (Reals and Heiger)

"उपलब्ध वस्तूंचे उत्पादन, वितरण आणि नियमन करण्याच्या व्यवस्थेला आर्थिक संस्था असे म्हणतात."

The economic institution is the patterns of behaving resultant organization of society relatives to the production distribution and consumption of goods and services.

but according to the Bohr's theory mvr $= \frac{nh}{2\pi}$

$$v = \frac{nh}{2\pi mr}$$

Sub the value of r in the above the equation

$$v = \frac{nh}{2\pi m}$$

$$\pi r m = \frac{n^2 h^2}{4\pi^2 m^2 r^2}$$

$$v = \frac{ne^2}{n} \propto \frac{z}{n}$$

After sub the value of all constant we get velocity of electron

$$v = 2.18 \times 10^6 \times \frac{z}{n} \text{ m/sec}$$

Energy of an electron

The bohrs theory is able to drive an expression energy of n^{th} orbital the expression drive for hydrogen for is given below.

$$E_n = \left[\frac{2\pi^2 m e^4 z^2}{n^2 h^2} \right]$$

Where,

E_n = energy of electron in n^{th} orbit

z = atomic number

h = plancs constant