



A.H.M.'s
ANJUMAN ARTS, SCIENCE AND COMMERCE COLLEGE,
ANJUMANABAD, BHATKAL-581320
(AFFILIATED TO THE KARNATAKA UNIVERSITY, DHARWAD)

Carboxylic Acids and Their Derivatives

CARBOXYLIC ACIDS & THEIR DERIVATIVES

UNIT-2
CHAPTER-6

Click to add notes

SLIDE 2 OF 31 ENGLISH (INDIA)

Classification

- C.A containing 1,2 & 3 carboxyl groups are known as mono, di & tri C.A respectively.
- These may be aliphatic, alicyclic & aromatic.
- These may further subdivided into saturated, unsaturated & substituted C.A.
- Some representative members are given below.

0:07:24 0:16:18

Carbo-acid_mks_v04



A.H.M.'s
ANJUMAN ARTS, SCIENCE AND COMMERCE COLLEGE,
ANJUMANABAD, BHATKAL-581320
(AFFILIATED TO THE KARNATAKA UNIVERSITY, DHARWAD)

Electro Motive Force

ELECTRO MOTIVE FORCE [Protected View] - PowerPoint

FILE HOME INSERT DESIGN TRANSITIONS ANIMATIONS SLIDE SHOW REVIEW VIEW Sign in

PROTECTED VIEW Be careful—files from the Internet can contain viruses. Unless you need to edit, it's safer to stay in Protected View. [Enable Editing](#)

1 **ELECTRO MOTIVE FORCE**
STANDARD CELL
WESTON CADMIUM CELL

2 The following are the requirements of the standard cell:
1. The cell must be reversible.
2. The cell must be constant in potential.
3. The cell must be constant in potential.
4. The cell must be constant in potential.
5. The cell must be constant in potential.

3

4 **Example**
The cell is used to determine the standard potential of a half-cell. The cell is represented by the following notation:
 $\text{Cd} | \text{CdSO}_4 (\text{sat.}) || \text{Hg}_2\text{SO}_4 | \text{Hg}$
The standard potential of the cell is 1.018 V at 25°C.

5

ELECTRO MOTIVE FORCE
STANDARD CELL
WESTON CADMIUM CELL

Activate Windows
Go to Settings to activate Windows

SLIDE 1 OF 22 ENGLISH (INDIA)

Type here to search

11:20 12-06-2021

ELECTRO MOTIVE FORCE [Protected View] - PowerPoint

FILE HOME INSERT DESIGN TRANSITIONS ANIMATIONS SLIDE SHOW REVIEW VIEW Sign in

PROTECTED VIEW Be careful—files from the Internet can contain viruses. Unless you need to edit, it's safer to stay in Protected View. [Enable Editing](#)

1 **ELECTRO MOTIVE FORCE**
STANDARD CELL
WESTON CADMIUM CELL

2 The following are the requirements of the standard cell:
1. The cell must be reversible.
2. The cell must be constant in potential.
3. The cell must be constant in potential.
4. The cell must be constant in potential.
5. The cell must be constant in potential.

3

4 **Example**
The cell is used to determine the standard potential of a half-cell. The cell is represented by the following notation:
 $\text{Cd} | \text{CdSO}_4 (\text{sat.}) || \text{Hg}_2\text{SO}_4 | \text{Hg}$
The standard potential of the cell is 1.018 V at 25°C.

5

ELECTRO MOTIVE FORCE
STANDARD CELL
WESTON CADMIUM CELL

Activate Windows
Go to Settings to activate Windows

SLIDE 3 OF 22 ENGLISH (INDIA)

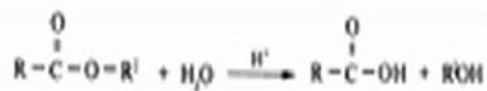
Type here to search

11:26 12-06-2021



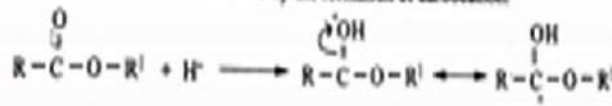
Bimolecular Hydrolysis of an Ester (A_{AC}2)

BIMOLECULAR HYDROLYSIS OF AN ESTER (A_{AC}2)

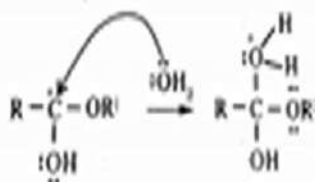


Mechanism :

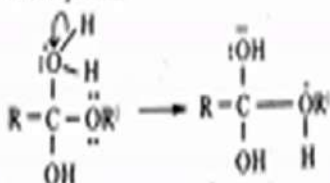
Step 1 : Protonation of an ester followed by the formation of carbocation.



Step 2 : Attack of nucleophile (i.e., water molecule) to the carbocation.



Step 3 : Transfer of a proton.





Types of Electrodes

• TYPES OF ELECTRODES:

- 1> Metal-metal ion electrode
 $\text{Zn(s)} | \text{Zn}^{2+}$
- 2> Gas electrode $\text{Pt} | \text{H}_2(\text{g}), \text{HCl}$
- 3> Amalgam $\text{Pt, Pb(Hg), Pb}^{2+}$
- 4> Metal-metal insoluble salt electrode Ag, AgCl(s), Cl^-
- 5> Oxidation- Reduction electrode
 $\text{Pt, Fe}^{2+}, \text{Fe}^{3+}$

0:00:16

0:36:27

Nernst_ref_mks_v06



Secondary reference electrode.
CALOMEL ELECTRODE



A.H.M.'s
ANJUMAN ARTS, SCIENCE AND COMMERCE COLLEGE,
ANJUMANABAD, BHATKAL-581320
(AFFILIATED TO THE KARNATAKA UNIVERSITY, DHARWAD)

Parachor

The screenshot shows a PowerPoint presentation titled "APPLICATIONS OF PARACHOR". The slide content includes:

- PARACHOR**
The parachor is defined as the molar volume of a liquid or a compound in its stable state divided by its density.
- APPLICATIONS OF PARACHOR**
 - Atomic parachor:** The additive property of a molecule is defined as that property, the total value of which is the sum of the values of its constituent atoms. Parachor is an example of such a property. Thus each atom has a definite value of parachor and the total parachor value of a simple molecule is the sum of the parachor values of constituent atoms. The parachor values associated with the atoms are called atomic parachors.

The presentation is being viewed in a media player window. A video feed of a person is visible in the top right corner.

The screenshot shows a PowerPoint presentation titled "LIQUID STATE CBCS_1 - PowerPoint". The slide content includes:

Density of benzene at 20°C, (D)
 $= 0.878 \text{ g/ml}$

Surface tension of benzene at 20°C, (γ)
 $= 29.3 \text{ dynes/cm}$

Molecular weight of benzene (C_6H_6)
 $= 78$

$\therefore$ Experimental value of parachor, (P)

$$= \frac{M\gamma^{1/4}}{D} = \frac{78 \times (29.3)^{1/4}}{0.878} = 206.7$$

Thus the experimental value is in close agreement with the calculated value. Hence Keku ructure is confirmed.

The presentation is being viewed in a media player window. A video feed of a person is visible in the top right corner.



Liquid State

LIQUID STATE

The molecular forces of a liquid are held by weak Vander Waal's forces. There are two types of forces in all liquids.

0:01:18 0:23:54

surface_ten_mks_v02

Media Player

Video player interface showing a lecture on the Liquid State. The title 'LIQUID STATE' is displayed in red. The text describes molecular forces in liquids. The video player controls show a progress bar at 0:01:18 / 0:23:54 and the file name 'surface_ten_mks_v02'. A small inset window shows a video feed of a person with a red 'N' overlay.

STALAGMOMETER

0:14:55 0:10:17

surface_ten_mks_v02

Media Player

Video player interface showing a lecture on the Stalagmometer. The title 'STALAGMOMETER' is displayed in black. The video player controls show a progress bar at 0:14:55 / 0:10:17 and the file name 'surface_ten_mks_v02'. A small inset window shows a video feed of a person with a red 'N' overlay.



A.H.M.'s
ANJUMAN ARTS, SCIENCE AND COMMERCE COLLEGE,
ANAND, GUJARAT-388120

● **Applications of EMF Measurements:**

- 1> Determination of PH of the solution
- 2> Determination of degree of dissociation
- 3> Determination of ionic product of water
- 4> Determination of solubility and solubility product
- 5> The potentiometric titration

Metal-Amalgam Electrodes

The activities and the electrode potentials of highly reactive metals such as sodium, potassium, etc. are difficult to measure in aqueous solution. Hence, the activity of the metal is lowered by dilution with mercury.



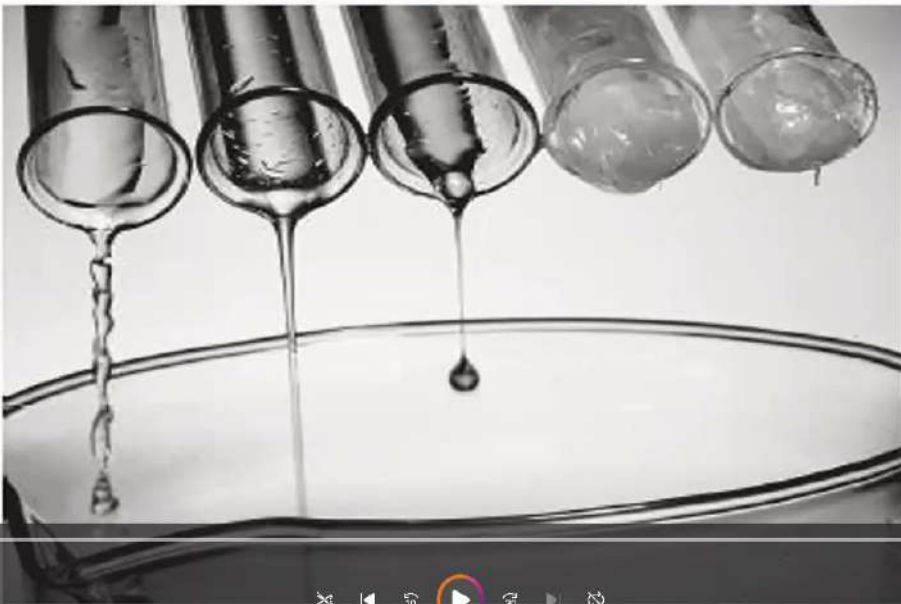
Example



Viscosity

Media Player

VISCOSITY



0:00:05 0:30:48

Vis_Ref_index_v02

Video player controls: play, pause, stop, previous, next, full screen, volume, and a progress bar.

Participant icons: A grid of icons representing participants in a video call. The top row shows a man's face and a red square with a white 'N'. The bottom row shows two generic person icons.

Media Player

SPCIFIC REFRACTION

- Refractive index of a liquid changes with the wave length of light and also with the temperature. To eliminate the effect of temperature, Lorenz and Lorentz showed purely from theoretical bases that

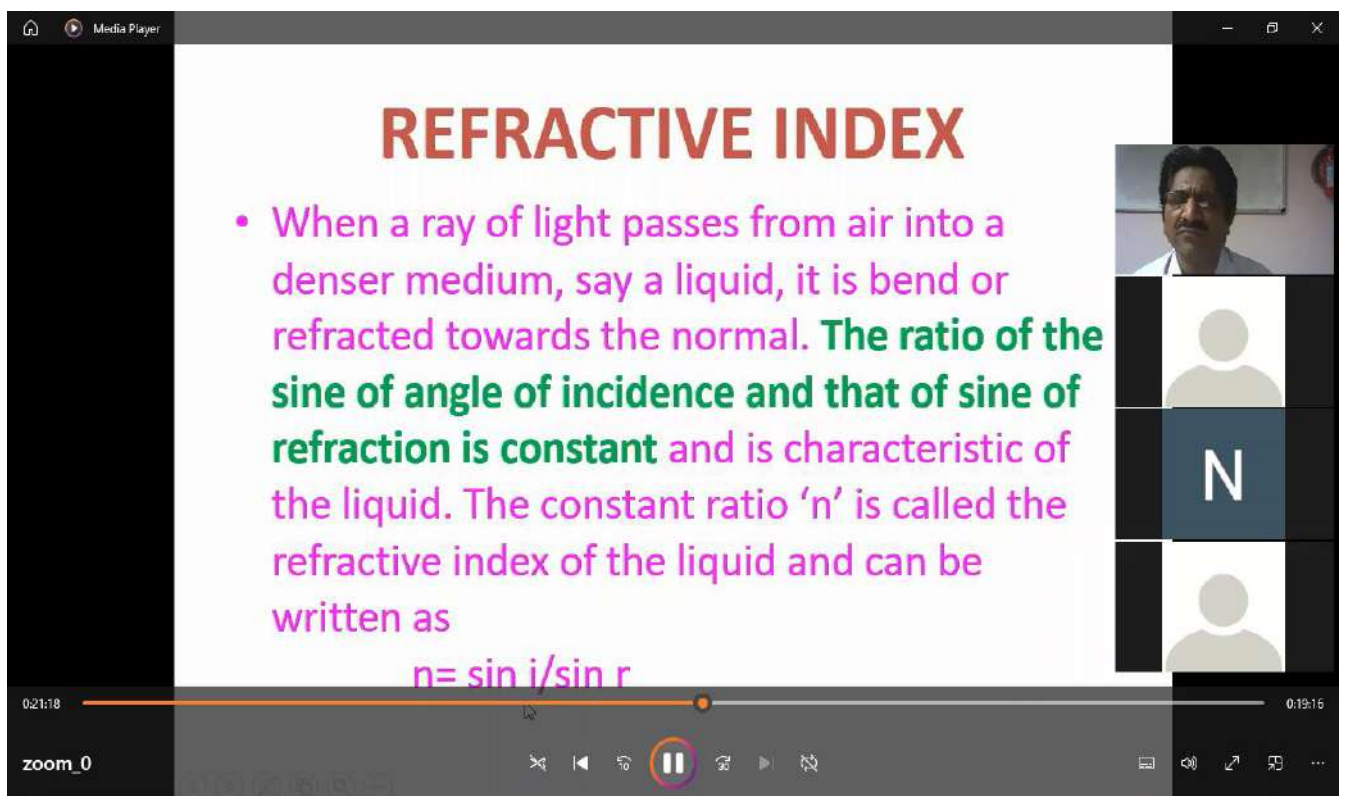
$$R = \frac{n^2 - 1}{n^2 + 2} \cdot \frac{1}{d}$$

0:00:05 0:30:48

Vis_Ref_index_v02

Video player controls: play, pause, stop, previous, next, full screen, volume, and a progress bar.

Participant icons: A grid of icons representing participants in a video call. The top row shows a man's face and a blue square with a white 'N'. The bottom row shows two generic person icons.



AHM's

Media Player

PHOTO CHEMISTRY

The reaction which occur as a result of the absorption of the electromagnetic radiation is known as photochemical reaction.

The branch of chemistry which explain such reaction and other chemical reaction which is affected by light is called photo chemistry.

00:01:13 00:05:11

video lecture

Media Player

- Thermal or dark reaction
Ordinary chemical reactions are influenced or induced by temperature, concentration, catalyst etc. except light radiation.
- Photochemical reactions - A reaction which is induced by absorption of the visible and ultraviolet radiation is called photo chemical reaction.

00:03:33 00:01:51

video lecture

Application of EMF Measurement

APPLICATION OF EMF MEASUREMENT

1) DETERMINATION OF P^H

- $$P^H = 0.6996 - 0.2422 - E_{\text{cell}} / 0.0591$$

- Advantages and Limitations of Quinhydrone electrode**

- 1) Can be setup very easily
- 2) P^H values are very accurate
- 3) Can not be used in a solution where quinhydrone react
- 4) Can not be used in a solution where P^H is more than 8

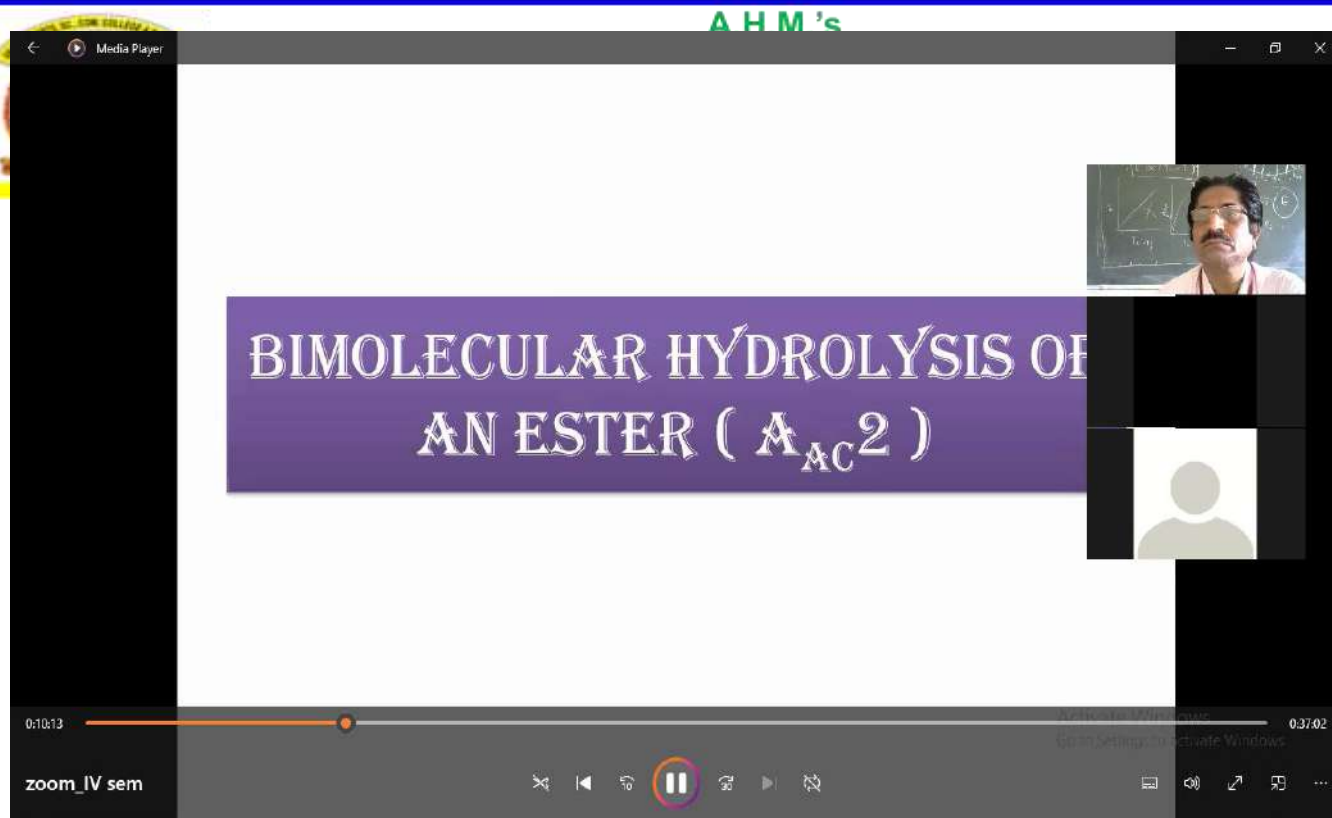
AHM's

Media Player

BIMOLECULAR HYDROLYSIS OF AN ESTER (A_{AC2})

0:10:13 0:37:02

zoom_IV sem



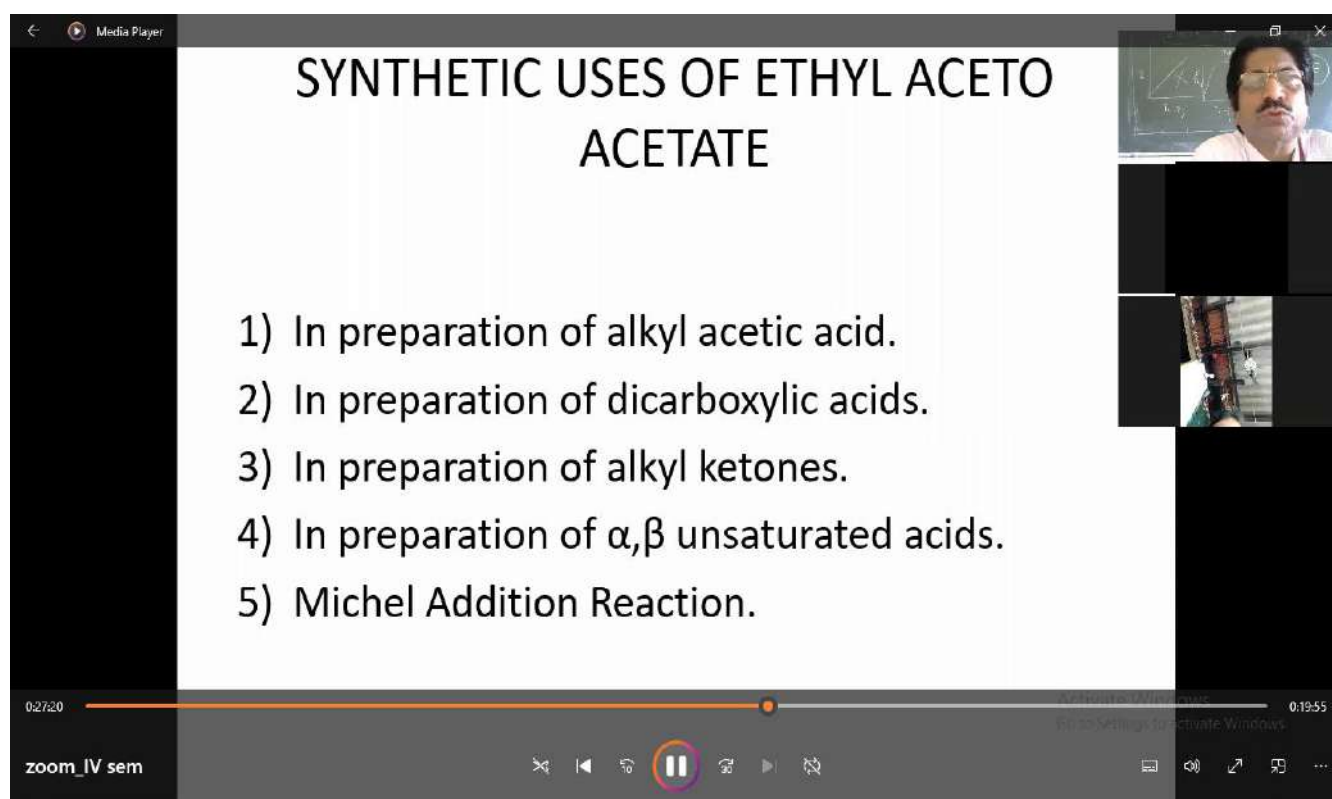
Media Player

SYNTHETIC USES OF ETHYL ACETO ACETATE

- 1) In preparation of alkyl acetic acid.
- 2) In preparation of dicarboxylic acids.
- 3) In preparation of alkyl ketones.
- 4) In preparation of α,β unsaturated acids.
- 5) Michel Addition Reaction.

0:27:20 0:19:55

zoom_IV sem



Metal ion Electrodes

AHM's

Media Player

Electromotive force - mkshaikh2... X

mail.google.com/mail/u/0/?tab=rm&ogbl#sent/K1tblthKLFNdHcdqHfHsZNIxDWIgQKvdPg?projector=1

Metal-Metal ion electrodes

The electrode reaction may be represented as

$$M^{n+} + ne^{-} \rightleftharpoons M$$

If the metal rod behaves as negative electrode (i.e. the reaction involves oxidation) the equilibrium will shift to the left and hence the concentration of the Metal ions in the solution will increase.

On the other hand, if the metal rod behaves as positive electrode (i.e. the reaction involves reduction), and the equilibrium will shift to the right and hence the concentration of the metal ions will decrease.

0:15:57 0:24:02

zoom_mks_VI sem

Electromotive force - mkshaikh2... X

mail.google.com/mail/u/0/?tab=rm&ogbl#sent/K1tblthKLFNdHcdqHfHsZNIxDWIgQKvdPg?projector=1

4. Metal - insoluble salt electrodes

A metal electrode is covered by the layer of an insoluble salt of the metal. The electrolyte contains the **anions** of the insoluble salt.

E.g. Ag/AgCl electrode $Ag | AgCl(s) | KCl(aq)$

$$Ag = Ag^{+} + e^{-}$$

$$Ag^{+} + Cl^{-} = AgCl$$

$$Ag + Cl^{-} = AgCl + e^{-}$$

red ox

$$\mathcal{E} = \mathcal{E}_{AgCl}^0 + \frac{RT}{F} \ln \frac{1}{a_{Cl^{-}}}$$

73

Electrode potential

• ELECTRODE POTENTIAL:

- The tendency of an electrode to lose or gain electrons when it is in contact with its own ion in the solution is called electrode potential.

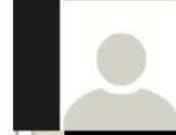
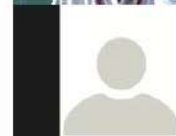
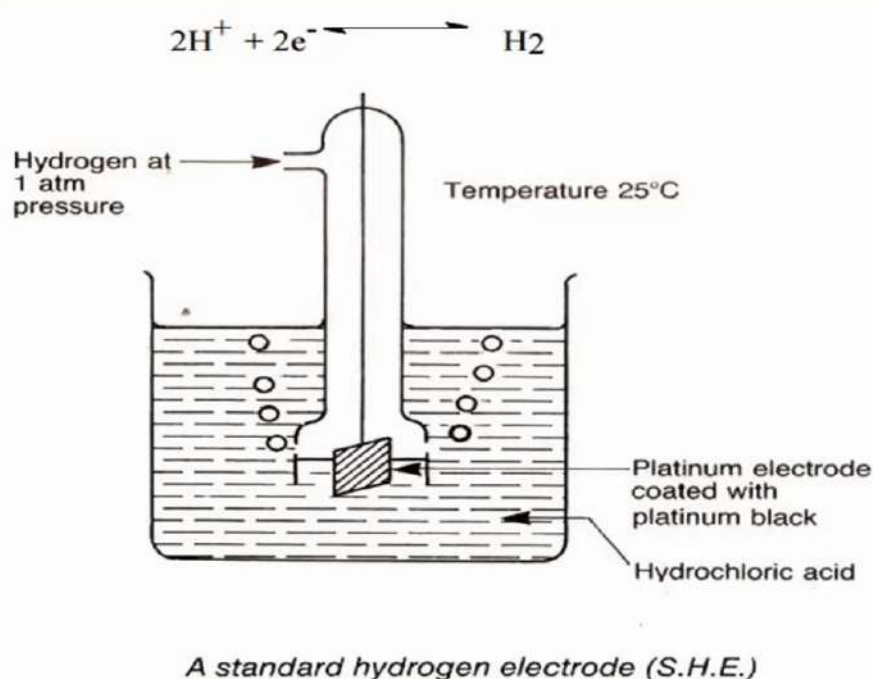
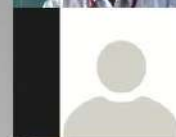
• NERNST EQUATION:

0:07:00

zoom_mks_VIsem



0:36:30



Cauchy's-Riemann's equation in the Polar form

AHM's

Media Player
Maths_VI_Sem (Complex Analysis) PPT (2) [Protected View] - PowerPoint

FILE HOME INSERT DESIGN TRANSITIONS ANIMATIONS SLIDE SHOW REVIEW VIEW

PROTECTED VIEW Be careful—files from the Internet can contain viruses. Unless you need to edit, it's safer to stay in Protected View. Enable Editing

50

51

52

53

54

Cauchy's-Riemann's equations in the Polar form
 If $f(z) = u + iv$ is an analytic function then C-R equations in the polar form are $\frac{\partial u}{\partial r} = \frac{1}{r} \frac{\partial v}{\partial \theta}$ and $\frac{\partial u}{\partial \theta} = -r \frac{\partial v}{\partial r}$

Proof: Let $x + iy = r(\cos \theta + i \sin \theta)$
 $\Rightarrow x = r \cos \theta, \quad y = r \sin \theta$
 $\Rightarrow r^2 = x^2 + y^2 \quad \text{and} \quad \theta = \tan^{-1}\left(\frac{y}{x}\right)$
 Now $r^2 = x^2 + y^2 \Rightarrow 2r \frac{\partial r}{\partial x} = 2x$
 $\Rightarrow \frac{\partial r}{\partial x} = \frac{x}{r} = \frac{r \cos \theta}{r} = \cos \theta$
 Similarly $\frac{\partial r}{\partial y} = \frac{y}{r} = \sin \theta$
 $\theta = \tan^{-1}\left(\frac{y}{x}\right) \Rightarrow \frac{\partial \theta}{\partial x} = -\frac{y}{x^2 + y^2} = -\frac{r \sin \theta}{r^2} = -\frac{\sin \theta}{r}$
 $\frac{\partial \theta}{\partial y} = \frac{x}{x^2 + y^2} = \frac{\cos \theta}{r}$
 Since u and v are functions of x and y , where x and y are themselves the functions of r and θ
 $\therefore$ By Chain-rule

001:27 0:29:18

B.Sc VI Sem Complex Analysis-300621

Ex (2) If $u = x^2 - y^2$, $v = -\frac{y}{x^2 + y^2}$, prove that u and v satisfy Laplace eqn but $u + iv$ is not an analytic function.

Solⁿ:

$u = x^2 - y^2 \Rightarrow \frac{\partial u}{\partial x} = 2x \dots (1) \quad \frac{\partial u}{\partial y} = -2y \dots (2)$
 $\therefore \frac{\partial^2 u}{\partial x^2} = 2, \quad \frac{\partial^2 u}{\partial y^2} = -2$
 $\therefore \nabla^2 u = \frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2}$
 $= 2 - 2 = 0$
 $\Rightarrow u$ satisfies Laplace eqn

$v = -\frac{y}{x^2 + y^2} \Rightarrow \frac{\partial v}{\partial x} = \frac{2xy}{(x^2 + y^2)^2} \dots (3)$
 $\frac{\partial v}{\partial y} = \frac{y^2 - x^2}{(x^2 + y^2)^2} \dots (4)$
 $\therefore \frac{\partial^2 v}{\partial x^2} = \frac{2y(x^2 - 3x^2)}{(x^2 + y^2)^3}, \quad \frac{\partial^2 v}{\partial y^2} = \frac{2y(x^2 - 3x^2)}{(x^2 + y^2)^3}$
 $\therefore \nabla^2 v = 0 \Rightarrow v$ satisfies Laplace eqn

From (1) and (4) $\frac{\partial u}{\partial x} \neq \frac{\partial v}{\partial y}$

Ex : If $f(z)$ is a regular function of z such that $f'(z) \neq 0$, then prove that

$$\left(\frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2}\right) \log |f'(z)| = 0$$

Proof: We know that $\frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2} = 4 \frac{\partial^2}{\partial z \partial \bar{z}}$

$$\begin{aligned} \left(\frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2}\right) \log |f'(z)| &= 4 \frac{\partial^2}{\partial z \partial \bar{z}} \{\log |f'(z)|\} \\ &= 2 \frac{\partial^2}{\partial z \partial \bar{z}} \{\log |f'(z)|^2\} \\ &= 2 \frac{\partial^2}{\partial z \partial \bar{z}} \{\log f'(z) \overline{f'(z)}\} \\ &= 2 \frac{\partial^2}{\partial z \partial \bar{z}} \{\log f'(z) f'(\bar{z})\} \quad \because \overline{f'(z)} = f'(\bar{z}) \\ &= 2 \frac{\partial^2}{\partial z \partial \bar{z}} \{\log f'(z) + \log f'(\bar{z})\} \end{aligned}$$

$$\therefore \left(\frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2}\right) \log |f'(z)| = 0$$

Ex : If ϕ and ψ are functions of x and y satisfy Laplace equations. Show that

$u + iv$ is analytic where $u = \frac{\partial \phi}{\partial y} - \frac{\partial \psi}{\partial x}$ and $v = \frac{\partial \phi}{\partial x} + \frac{\partial \psi}{\partial y}$

Solⁿ : Since ϕ and ψ satisfy Laplace equations

$$\therefore \frac{\partial^2 \phi}{\partial x^2} + \frac{\partial^2 \phi}{\partial y^2} = 0 \dots (1)$$

$$\text{and } \frac{\partial^2 \psi}{\partial x^2} + \frac{\partial^2 \psi}{\partial y^2} = 0 \dots (2)$$

Let $f(z) = u + iv$, where $u = \frac{\partial \phi}{\partial y} - \frac{\partial \psi}{\partial x}$ and $v = \frac{\partial \phi}{\partial x} + \frac{\partial \psi}{\partial y}$

$$\therefore \frac{\partial u}{\partial x} = \frac{\partial}{\partial x} \left(\frac{\partial \phi}{\partial y} - \frac{\partial \psi}{\partial x} \right) = \frac{\partial^2 \phi}{\partial x \partial y} - \frac{\partial^2 \psi}{\partial x^2} \dots (3)$$

Media Player

FILE HOME INSERT DESIGN TRANSITIONS ANIMATIONS SLIDE SHOW REVIEW VIEW

Preview None Appear Fade Fly In Float In Split Wipe Shape Effect Options

Animation

Advanced Animation

Start: On Click

Duration: Auto

Delay: 00:00

34

35

36

37

38

39

Ex (3) Find the analytic function whose imaginary part is $3x^2y$

Solⁿ :

Let $v = 3x^2y - y^3$

$\Rightarrow \frac{\partial v}{\partial x} = 6xy, \quad \frac{\partial v}{\partial y} = 3x^2 - 3y^2$

$\therefore \psi_1(z, 0) = \left(\frac{\partial v}{\partial y}\right)_{(z,0)} = 3z^2$

$\psi_2(z, 0) = \left(\frac{\partial v}{\partial x}\right)_{(z,0)} = 0$

$\therefore$ By Milne's-Thomson's method

$f(z) = \int [\psi_1(z, 0) + i\psi_2(z, 0)]dz + c$

$= \int [3z^2 + i(0)]dz = \int 3z^2 dz$

$= z^3 + c$

$\therefore f(z) = z^3 + c$

0:00:55

0:34:21

B.Sc VI Sem Complex Analysis-230621

NOTES COMMENTS

Media Player

OR : Let $v = 3x^2y - y^3$

$\Rightarrow \frac{\partial v}{\partial x} = 6xy, \quad \frac{\partial v}{\partial y} = 3x^2 - 3y^2$

By Total differential

$du = \frac{\partial u}{\partial x} dx + \frac{\partial u}{\partial y} dy$

$= \frac{\partial v}{\partial y} dx - \frac{\partial v}{\partial x} dy$ By C-R Equations

$= (3x^2 - 3y^2) dx - 6xy dy$

$= Mdx + Ndy$

which is an exact eqn $\therefore \frac{\partial M}{\partial y} = \frac{\partial N}{\partial x} = -6y$

$\therefore$ The solution is

$u = \int_{y-\text{const}} (3x^2 - 3y^2) dx + \int 0 dy$

$\Rightarrow u = x^3 - 3xy^2 + c$

0:07:42

0:27:34

B.Sc VI Sem Complex Analysis-230621

NOTES COMMENTS

Note : If $f(z) = u + iv$ is an analytic function then C-R Equations are satisfied



Ex (2) Show that e^z is an analytic function and find its derivative .

Solⁿ: Let $f(z) = e^z$

$$= e^{x+iy}$$

$$= e^x e^{iy}$$

$$= e^x (\cos y + i \sin y)$$

$$= e^x \cos y + i e^x \sin y = u + iv$$

$$\therefore u = e^x \cos y ,$$

$$v = e^x \sin y$$

$$\Rightarrow \frac{\partial u}{\partial x} = e^x \cos y \dots\dots (1)$$

$$\frac{\partial v}{\partial x} = e^x \sin y \dots\dots (3)$$

$$\frac{\partial u}{\partial y} = -e^x \sin y \dots\dots (2)$$

$$\frac{\partial v}{\partial y} = e^x \cos y \dots\dots (4)$$

$$\therefore \text{From (1) and (4)} \quad \frac{\partial u}{\partial x} = \frac{\partial v}{\partial y}$$

$$\text{From (2) and (3)} \quad \frac{\partial u}{\partial y} = -\frac{\partial v}{\partial x}$$

$\Rightarrow$ C-Reg $\Rightarrow f(z) = e^z$ is analytic function



Note : If $f(z) = u + iv$ is an analytic function then C-R Equations are satisfied

$$\begin{aligned} \text{i.e. } \frac{\partial u}{\partial x} &= \frac{\partial v}{\partial y} \quad \text{and} \quad \frac{\partial u}{\partial y} = -\frac{\partial v}{\partial x} \\ \therefore \frac{\partial^2 u}{\partial x^2} &= \frac{\partial^2 v}{\partial x \partial y} \quad \text{and} \quad \frac{\partial^2 u}{\partial y^2} = -\frac{\partial^2 v}{\partial y \partial x} \\ \Rightarrow \frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} &= \frac{\partial^2 v}{\partial x \partial y} - \frac{\partial^2 v}{\partial y \partial x} = 0 \\ \Rightarrow \frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} &= 0 \quad \text{i.e. } \nabla^2 u = 0 \end{aligned}$$

This equation $\nabla^2 = 0$ i.e. $\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} = 0$ is known as Laplace equation or Potential equation

0:07:07

0:30:04

VI Sem_M-III_Complex Analysis_190621



Construction of Analytic function

Method - I : milne's-Thomson's method

We have $z = x + iy$ and $\bar{z} = x - iy$ so that

$$x = \frac{z+\bar{z}}{2} \quad \text{and} \quad y = \frac{z-\bar{z}}{2i}$$

$$\begin{aligned} \therefore f(z) &= u(x, y) + iv(x, y) \\ &= u\left(\frac{z+\bar{z}}{2}, \frac{z-\bar{z}}{2i}\right) + i v\left(\frac{z+\bar{z}}{2}, \frac{z-\bar{z}}{2i}\right) \end{aligned}$$

which is a function of two independent variables z and $\bar{z}$

By taking $x = z$ and $y = 0$ so that $z = \bar{z}$, we get

$$f(z) = u(z, 0) + iv(z, 0)$$

We know that

$$\begin{aligned} f'(z) &= \frac{\partial u}{\partial x} + i \frac{\partial v}{\partial x} \\ &= \frac{\partial u}{\partial x} - i \frac{\partial u}{\partial y} \quad \text{By C-R Eqns} \end{aligned}$$

$$\text{Taking } \frac{\partial u}{\partial x} = \phi_1(x, y) = \phi_1(z, 0)$$

$$\text{and } \frac{\partial u}{\partial y} = \phi_2(x, y) = \phi_2(z, 0)$$

AHM's

LAPLACE TRANSFORMS - Microsoft PowerPoint

Home Insert Design Animations Slide Show Review View

Cut Copy Paste Format Painter Clipboard

Layout New Slide Reset Delete

Font Paragraph Drawing

Text Direction Align Text Convert to SmartArt

Shape Fill Shape Outline Shape Effects

Find Replace Select

Slides Outline

1 LAPLACE TRANSFORMS By: Prof S. A. Indikar

2

3

4

5

LAPLACE TRANSFORMS

By : Prof S. A. Indikar

0:00:56 0:30:14

zoom_0M-III LT-02

Media Player

8. Find $L\{t^n\}$, where n is a +ve integer

Solⁿ: Let $f(t) = t^n$

By the definition of L. T we have

$$L\{f(t)\} = \int_0^{\infty} e^{-st} f(t) dt$$
$$\therefore L\{t^n\} = \int_0^{\infty} e^{-st} t^n dt$$

0:06:28 0:24:42

zoom_0M-III LT-02

8. Find $L\{t^n\}$, where n is a +ve integer

Solⁿ: Let $f(t) = t^n$

By the definition of L.T we have

$$L\{f(t)\} = \int_0^{\infty} e^{-st} f(t) dt$$

$$\therefore L\{t^n\} = \int_0^{\infty} e^{-st} t^n dt$$



Definition:

Let $f(t)$ be a real valued function defined for all +ve values of t [i.e. $0 \leq t < \infty$]. Then the Laplace Transform of $f(t)$ denoted by $L\{f(t)\}$ and is defined by

$$L\{f(t)\} = \int_0^{\infty} e^{-st} f(t) dt, \text{ where } s \text{ is a real or complex number}$$

Provided that the integral exists.

Since the integral on R.H.S is a function of s , it is also denoted by $F(s)$ or $f(s)$ or $\bar{f}(s)$

$$\therefore L\{f(t)\} = F(s) = \int_0^{\infty} e^{-st} f(t) dt$$



2. To find $L\{k\}$, where k is any constant

Solⁿ: By the definition of L.T we have

$$L\{f(t)\} = \int_0^{\infty} e^{-st} f(t) dt$$

$$\begin{aligned} \therefore L\{k\} &= \int_0^{\infty} e^{-st} k dt = k \int_0^{\infty} e^{-st} dt \\ &= k \left[\frac{e^{-st}}{-s} \right]_0^{\infty} = -\frac{k}{s} [e^{-\infty} - e^{-0}] \\ &= -\frac{k}{s} [0 - 1] = \frac{k}{s} \end{aligned}$$

$$\therefore L\{k\} = \frac{k}{s}$$

3. To find $L\{e^{at}\}$, where a is any constant

Solⁿ: By the definition of L.T we have

$$L\{f(t)\} = \int_0^{\infty} e^{-st} f(t) dt$$

$$\therefore L\{e^{at}\} = \int_0^{\infty} e^{-st} e^{at} dt = \int_0^{\infty} e^{-(s-a)t} dt$$



Partial derivatives ppt - Microsoft PowerPoint

Home Insert Design Animations Slide Show Review View

Clipboard Font Paragraph Drawing

Slides Outline

1. REAL ANALYSIS
By Prof. S. A. Indira

2. Continuity of a function of two variables

3. LIMIT AND CONTINUITY

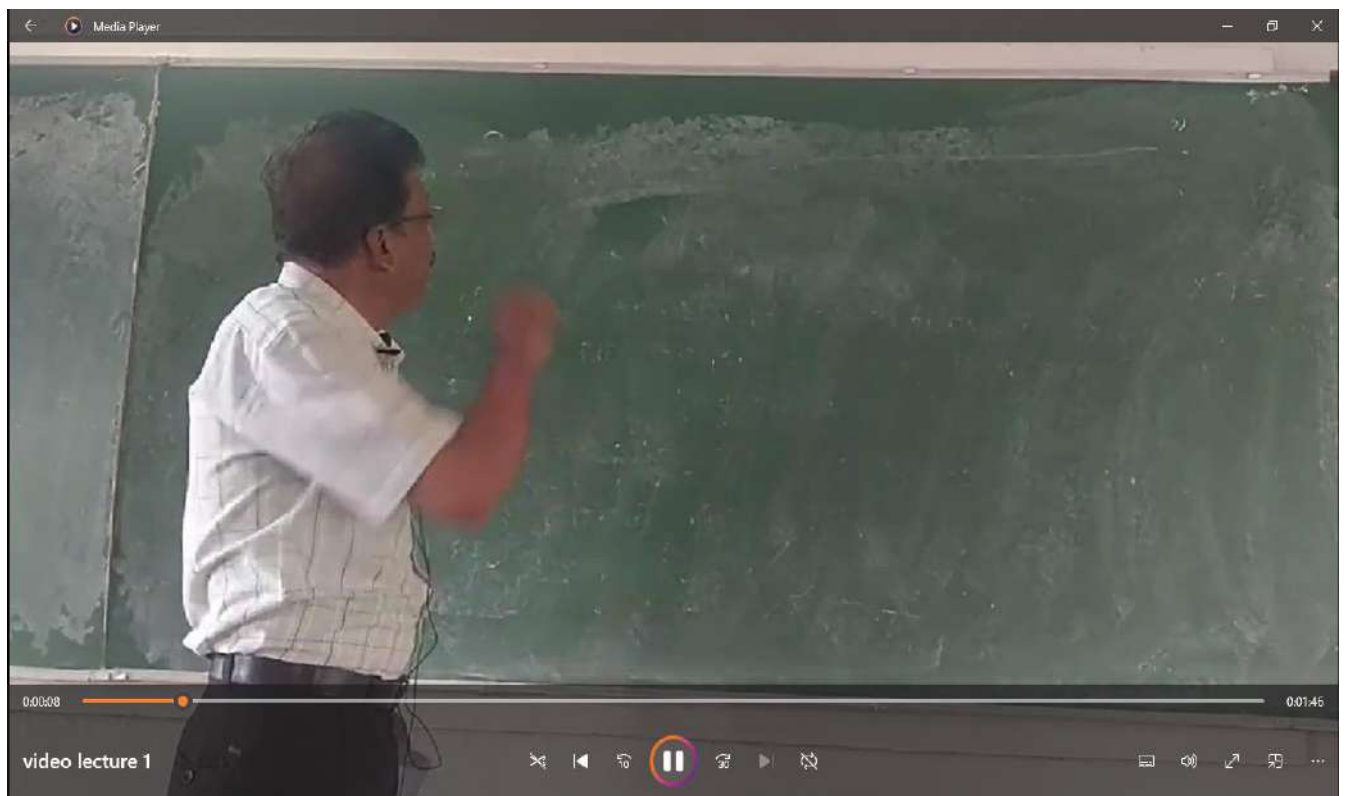
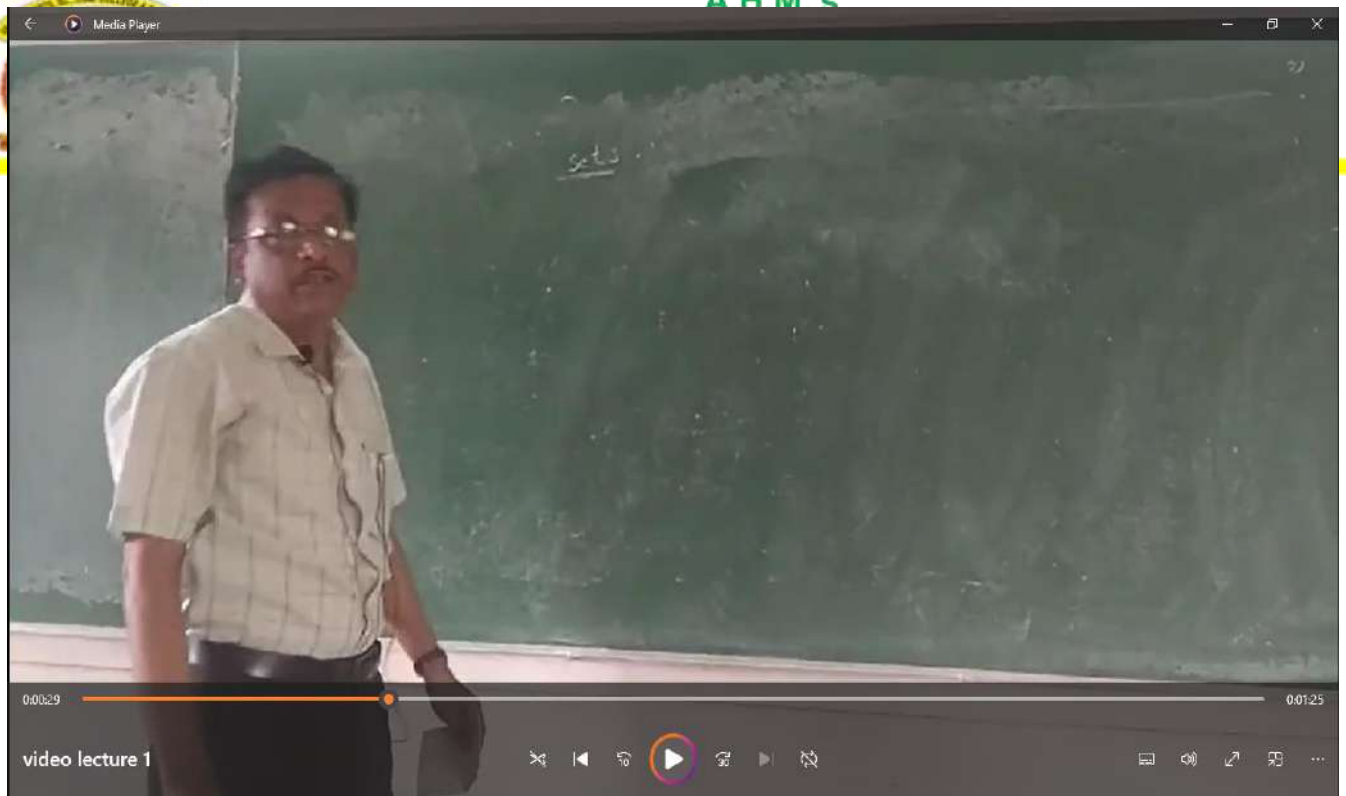
4. Limit of a function

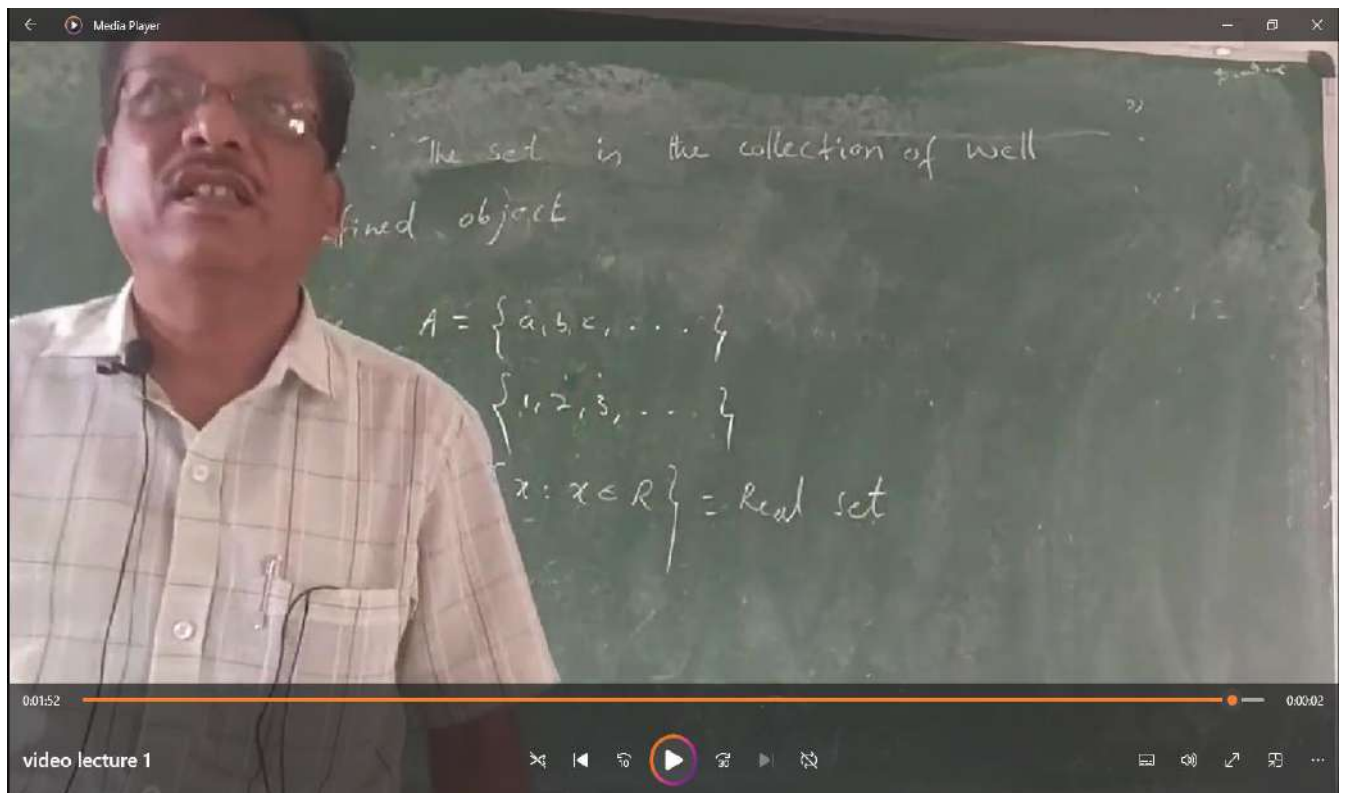
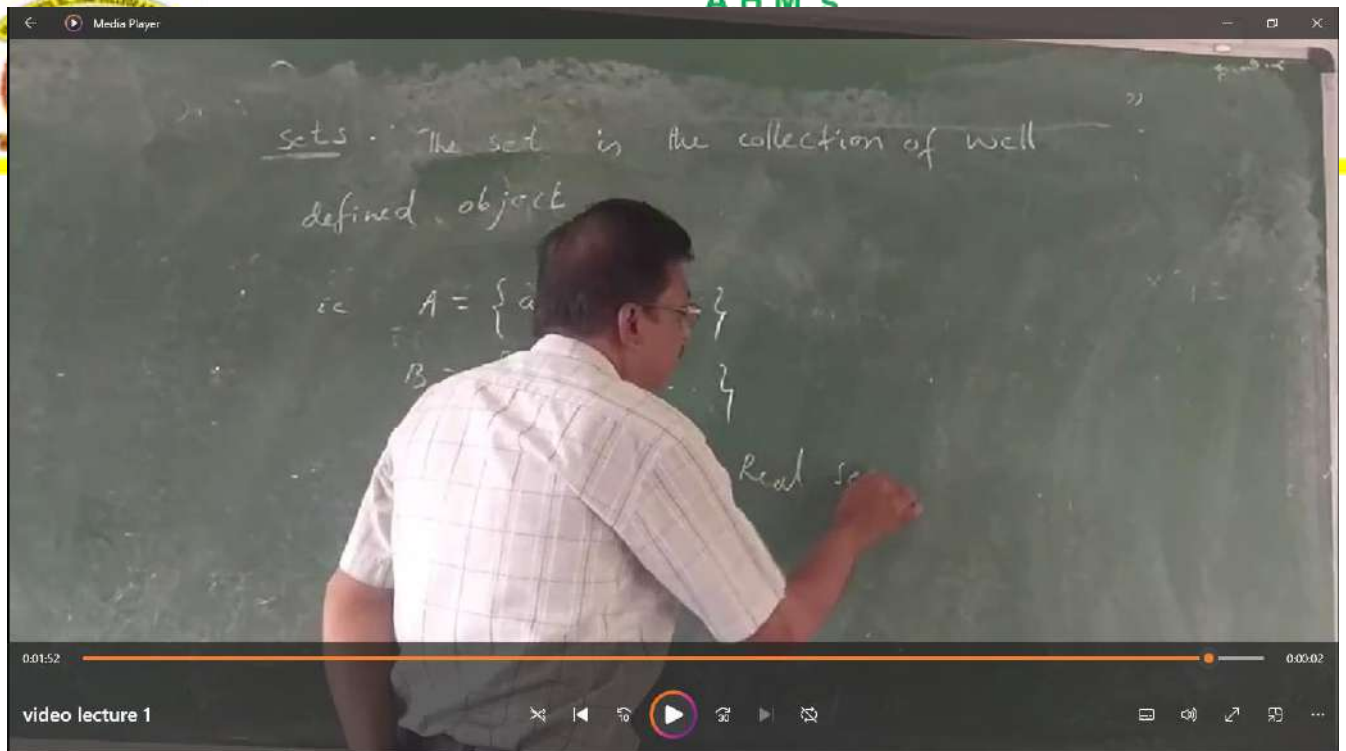
5. Continuity of a function of two variables

REAL ANALYSIS

By: Prof S. A. Indira

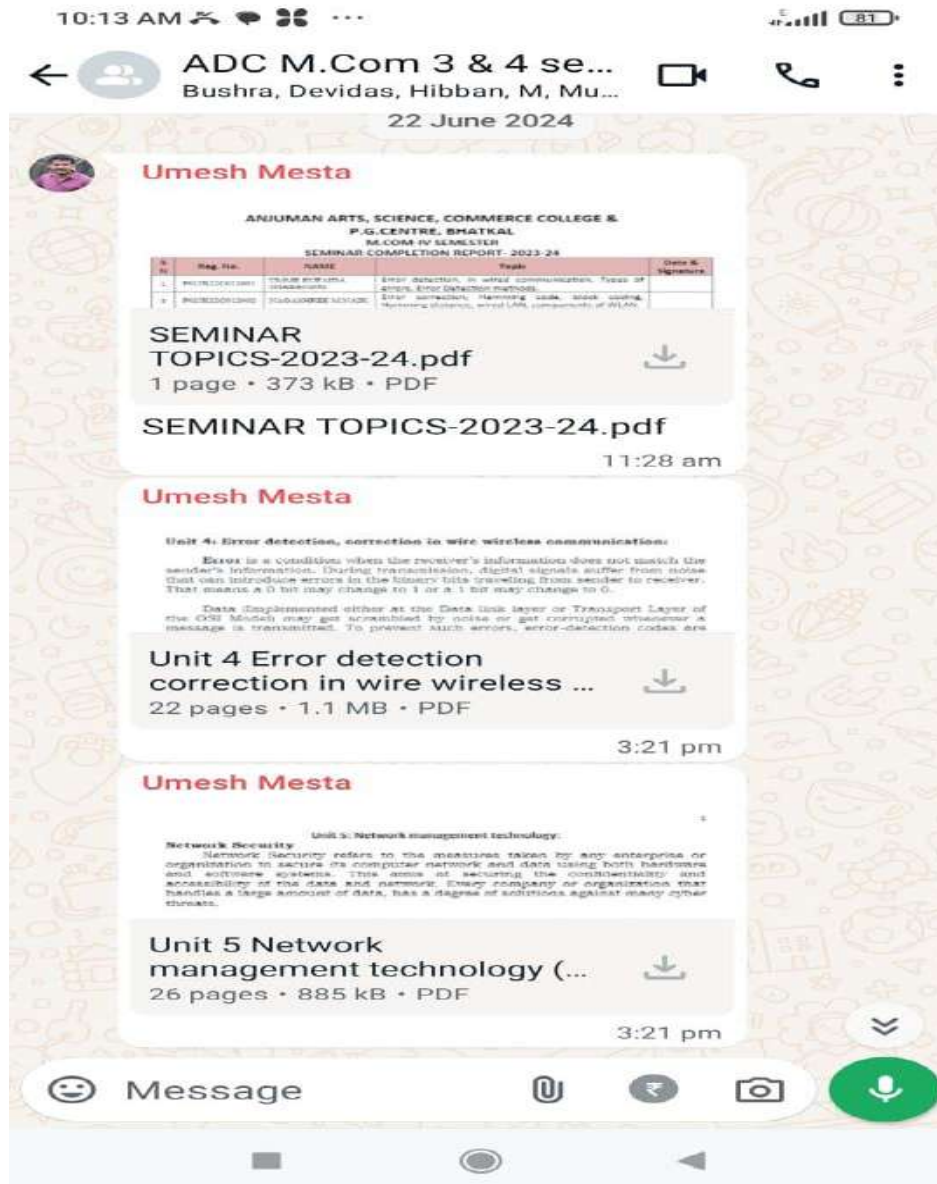
Slide 1 of 13 Blue Waves English (United States)







A.H.M.'s
ANJUMAN ARTS, SCIENCE AND COMMERCE COLLEGE,
ANJUMANABAD, BHATKAL-581320
(AFFILIATED TO THE KARNATAKA UNIVERSITY, DHARWAD)







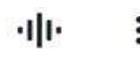
A.H.M.'s
ANJUMAN ARTS, SCIENCE AND COMMERCE COLLEGE,
ANJUMANABAD, BHATKAL-581320
(AFFILIATED TO THE KARNATAKA UNIVERSITY, DHARWAD)

10:18 AM

79%



B.Com - IV Sem [2023-24]
only admins can send messages



- Unit III: Writing Skills**
- ✓ Business Writing
 - ✓ Email Writing
 - ✓ Précis Writing

Regards,
Department of English

8:52 pm

Professor Shazeer

Draft Model Question Paper

Semester - IV
Subject: Generic English - 4
Ability Enhancement Compulsory Course (AECC)
CODE: 024ENG041
Text: Gulliver's Travels (Voyage to Lilliput)

GENERAL PATTERN OF THEORY QUESTION PAPER FOR AECC-GENERIC ENGLISH

Max Marks: 80

Duration: 2 hrs.

Part-A

Directions: Question number 1-6 carries 2 marks each. (Answer any 05 of the following questions)

(5x2=10)

1. Who is an author of Gulliver's Travels and how many books are there in it?
2. What is the capital of Lilliput? Which object of Gulliver attracts the Lilliputians?
3. How do the Lilliputians offer Gulliver something to drink?
4. What kind of punishment Lilliputians send to Gulliver?
5. How did Gulliver attack on Blinfacallum? Which title was given to him?
6. What is the name of Gulliver's ship and what happened to it?

Part-B

Directions: Question number 07- 11 carries 05 marks each. (Answer any 04 questions as directed)

2000/250 word each

(4x5=20)

7. Write a note on conversation between Gulliver and Emperor?
8. Prepare a minute for the meeting held to improve the efficiency of new employees.
9. Write an email to CEO of ZOMATO regarding the issues related to food delivery.
10. Write a short blog on the importance of Republic Day.

Part-C

Question number 12-15 carries 10 Marks each. Answer any 03 of the following questions in 2000/250 word each

12. Critically comment on the thematic aspects of Voyage to Lilliput.
13. Sketch the character Lemuel Gulliver.

14. Make Précis for the following passage and give a suitable title.

Today there are 3000 million people in the world. Fifty years ago only about 2000 million people lived in it. If earth's population were evenly distributed over its land surface, there would be about 550 persons to the square mile. But Earth has vast areas of forest, mountains and desert which are almost totally inhabited. On the other hand, it has great cities each with millions of people living in a few square miles.

To feed the fast growing population of our earth, scientists and planners have to discover new ways to produce more. One possible way is to bring more land under cultivation. This can be done only in places where there is lot of land not used for productive purposes. In many places there is no longer possible all the arable land is already cultivated. A second way is to make use of new types of seeds to produce more. Already a number of new strains of paddy and wheat have been developed in different parts of the world. India is one of the countries where a lot of useful work has been done in the field of agriculture research.

15. Choose the correct words given in the bracket and complete the paragraph (Close Test)

Birthdays are very special occasions. We like to _____ these occasions by having birthday cakes and presents. We also like to _____ throwing birthday parties and inviting our friends to _____ over. During these parties, games like Tennis, Basketball, Chess or Musical Chairs are enjoyed by _____ the young and the young _____ heart. In Latin America, there is a popular birthday _____ called 'Breaking the Piñata'.

A piñata is a flashy large, round object _____ from hardened newspapers and paste. It has a hollow center which is _____ with sweets, chocolates and toys that children love. The outside of the piñata is festively decorated _____ colorful strips of paper. Before the party _____, the piñata is usually hung in a high place such as the ceiling of a room.

(In each blank, write the correct word from the words given in the bracket.)

Model QP - Generic English 4
- AECC BCom IV NEP (Code -
024ENG041)

8:52 pm

3 July 2024



~ Mamata Naik

+91 63636 53478



Message





A.H.M.'s
ANJUMAN ARTS, SCIENCE AND COMMERCE COLLEGE,
ANJUMANABAD, BHATKAL-581320
(AFFILIATED TO THE KARNATAKA UNIVERSITY, DHARWAD)

