STUDENT SEMINAR REGISTER

i	a_i	b_i	x_i	$f(x_i)$
1	1	3.2	2.1	1.191
2	2.1	3.2	2.65	0.552125
3	2.65	3.2	2.925	0.085828125
4	2.925	3.2	3.0625	−0.05443444
5	2.925	3.0625	2.99375	0.0063278809
6	2.99735	3.0625	3.028125	−0.016520721
7	2.99375	3.028125	3.0109375	−0.006969334
8	2.99375	3.00234375	2.998046875	−0.00233275

After 8 iterations $x_8 = 2.998046875$, approximately the root α with an error.

$$|x_9 - x_8| < |a_9 - b_9| = |2.99375 - 2.998046875|$$
$$= 0.004296875.$$

Since $|x_9| < |a_9|$, $\dfrac{|x_9 - x_8|}{|x_9|} < \dfrac{|x_9 - x_8|}{|a_9|} < 1.4352 \times 10^{-3}$

So, the approximation is correct to atleast within 10^{-2}.

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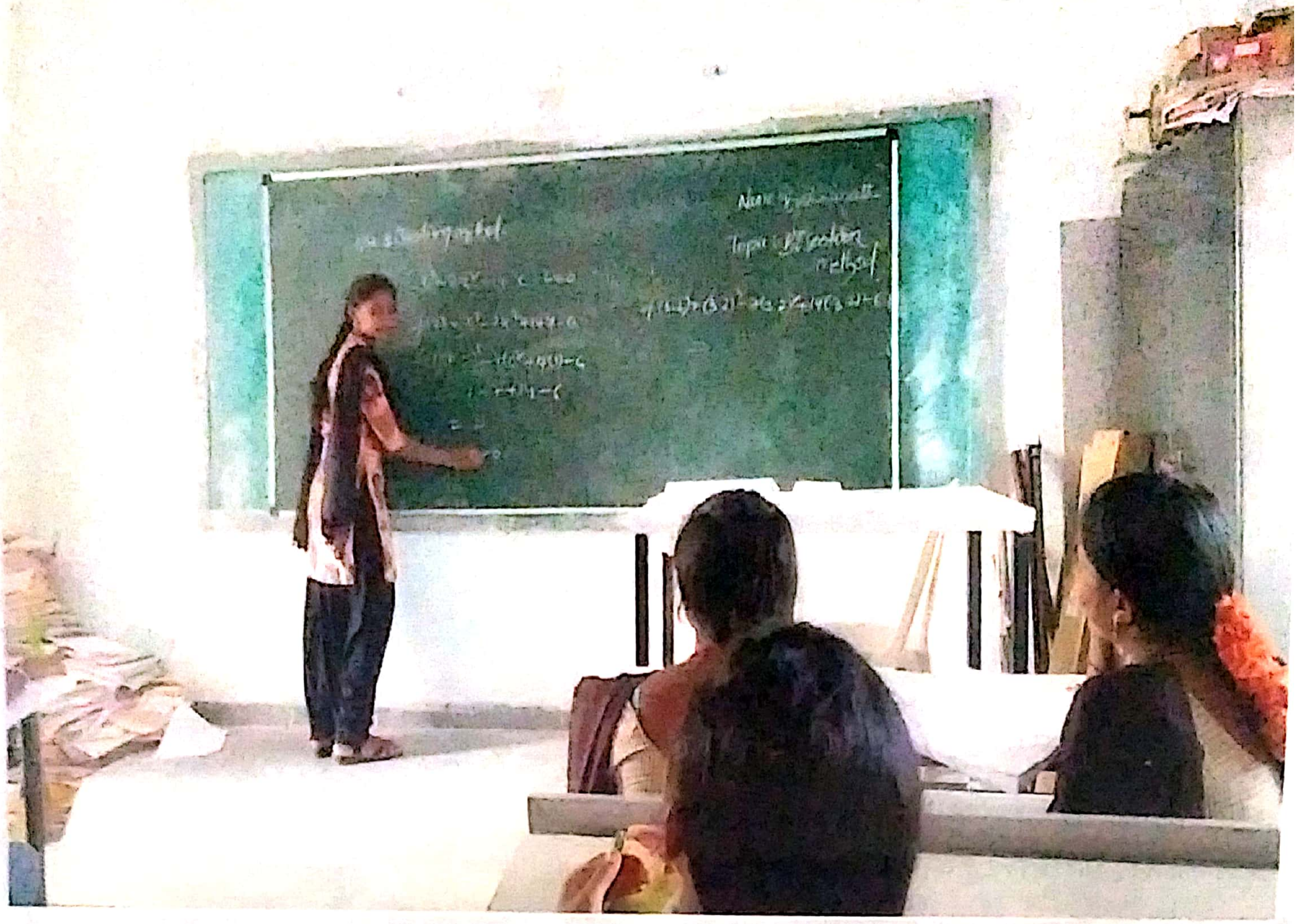
Sl No	Name of the Student	Signature of the Student
1	Sk. Rafi	Sk-Rafi
2	Sk. Badeshab.	Sk. Badesaheb.
3	Usha Sangeetha	Usha Sangeetha.
4	Nikhil	Nikhil

Result:- Good Teaching ability



NAME :- G. Usha Sangeetha

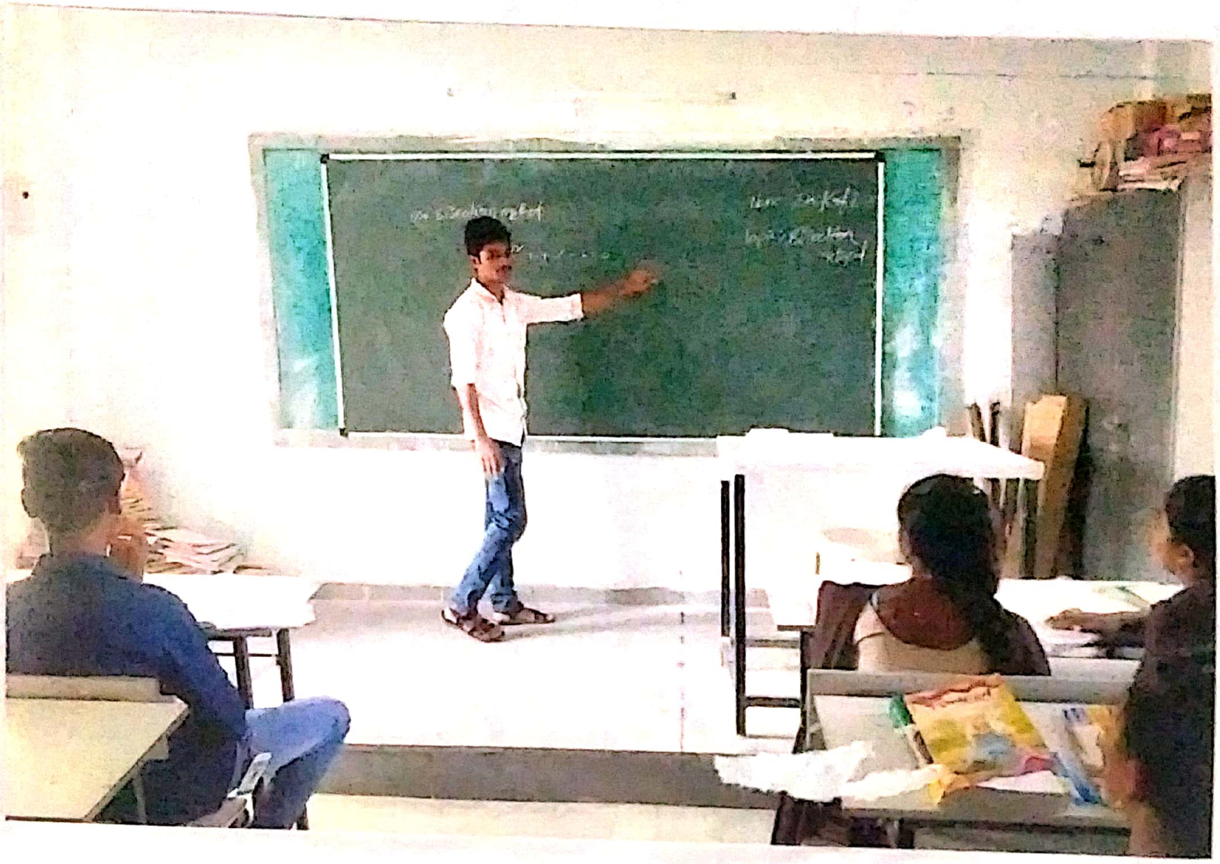
TOPIC :- Bisection method

DATE :- July 25

CLASS :- BSC (III), V Sem

Sl No	Name of the Student.	Signature of the Student
	SK. Rafi	SK. Rafi
	SK. Badesaheb.	SK. Badesaheb.
	V. Sangeetha.	V. Sangeetha.
	G. Nikhil.	G. Nikhil.

Result:- Good Teaching
Improve writing skills.



NAME :- Sk. Rafi

TOPIC :- Bisection method - II

DATE :- Aug 10

CLASS :- Bsc (MII), V Sem

lem: Use the Bisection method to find root of $= x^2 - x - 3$. correct upto three decimal places.

tion: $f(x) = x^2 - x - 3$, we see that $f(1) = -3$ and $f(3) = 3$,
s $f(1) f(3) < 0$ Hence $a_1 = 1, b_1 = 3$.

a_i	b_i	x_i	$f(x_i)$
1	3	2	-1
2	3	2.5	0.7500
2	2.5	2.25	-0.1875
2.25	2.5	2.375	0.2656
2.25	2.375	2.3125	0.0352
2.2813	2.3125	2.2813	-0.0771
2.2813	2.3125	2.2969	-0.0212
2.2969	2.3125	2.3047	0.0069
2.2969	2.3047	2.3008	-0.0072
2.3008	2.3047	2.3027	-0.0001
2.3027	2.3047	2.3037	0.0034
2.3027	2.3037	2.3032	0.0016

$$|x_{11} - x_{12}| \le 0.0001$$

$$\Rightarrow \frac{2.3037 + 2.3032}{2} = 2.30345 \text{ is the root}$$

Sl No	Name of the Student	Signature of the Student
	Sk. Rabi	Sk. Rabi
	V. Sangeetha.	V. Sangeetha.
	G. Nikhil	G. Nikhil
	Sk. Badesaheb.	Sk. Badesaheb.

* Good Teaching ability
* Good writing skills on board

-ject to find the equation of the

vertex is the point $(\alpha, \beta$ · th

generators intersect the conic. th

$ax^2 + 2hxy + by^2 + 2gx$ - (ii

$\frac{-\beta}{-\gamma}$ r $\big)$ —— (i)

have to find the locus of p

is through the given point (α,

given curve.

ations to any line through (

2

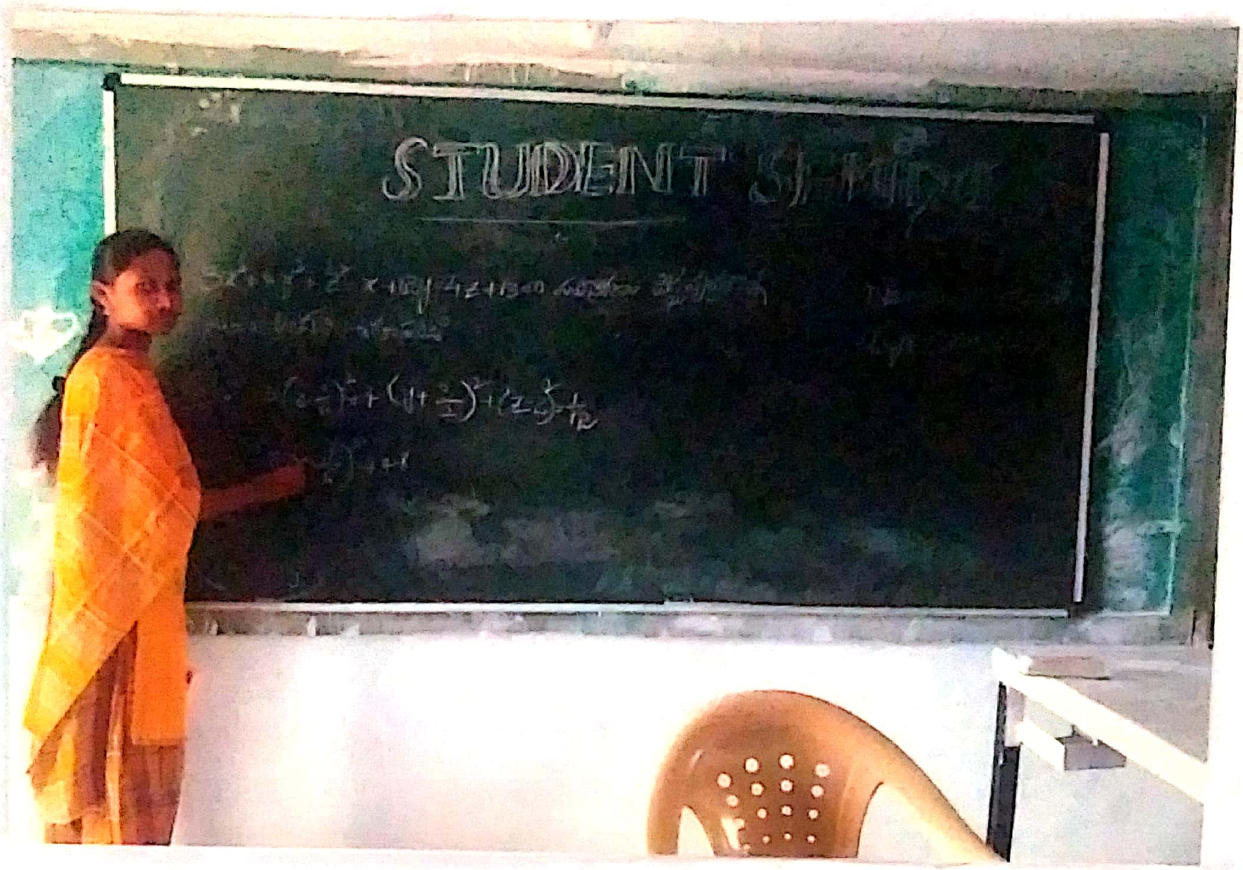
$$\frac{x-a}{l} = \frac{y-\beta}{m} = z$$ ——)

$-\gamma)^2$ will be a generator of the

intersects the given curve.

e $z = 0$ in the ...

Sl no	Name of the Student	Signature of the Student
1	Sk. Rabi.	Sk. Rabi
2	Sk. Badesaheb.	Sk. Badesaheb.
3	G. Nikhil	G. Nikhil
4	V. Sangeetha.	V. Sangeetha.



NAME:- G. Usha Sangeetha

TOPIC:- Coincoides

DATE:- oct-1

class:- BSC (VI), VI Sem

is meets the surface in the points (a,0,0
, whereas the y and z -axis do not m
2)

ction by the planes z=k and y=k are th
es.

$-\frac{y^2}{b^2}=1+\frac{k^2}{c^2}, z=k; \frac{x^2}{a^2}-\frac{z^2}{c^2}=1+\frac{k^2}{b^2}$

ly

ane x=k does not meet the surface if
no portion of the surface between an p

$x=-a, x=a.$

^{2} i.e when $k \geq a$ or $k \leq -a$; the plane
the surface in the ellipse

$$\frac{y^2}{b^2}+\frac{z^2}{c^2}=\frac{k^2}{a^2}-1, x=k.$$

pse increase in size as k^2 increases

$-\frac{x^2}{a^2}+\frac{y^2}{b^2}+\frac{z^2}{c^2}=1,$ (ii) $-\frac{x^2}{a^2}-\frac{y^2}{b^2}+\frac{z^2}{c^2}=1$

SL NO	Name of the Student	Signature of the Student
	SK. BadeSaheb.	SK. Rafi
	G. Nikhil.	G. Nikhil
	V. Sangeetha.	V. Sangeetha.
	SK. Rabi	SK. Rafi.

* Good Teaching
* Improve Voice.
* Improve writing Skills.

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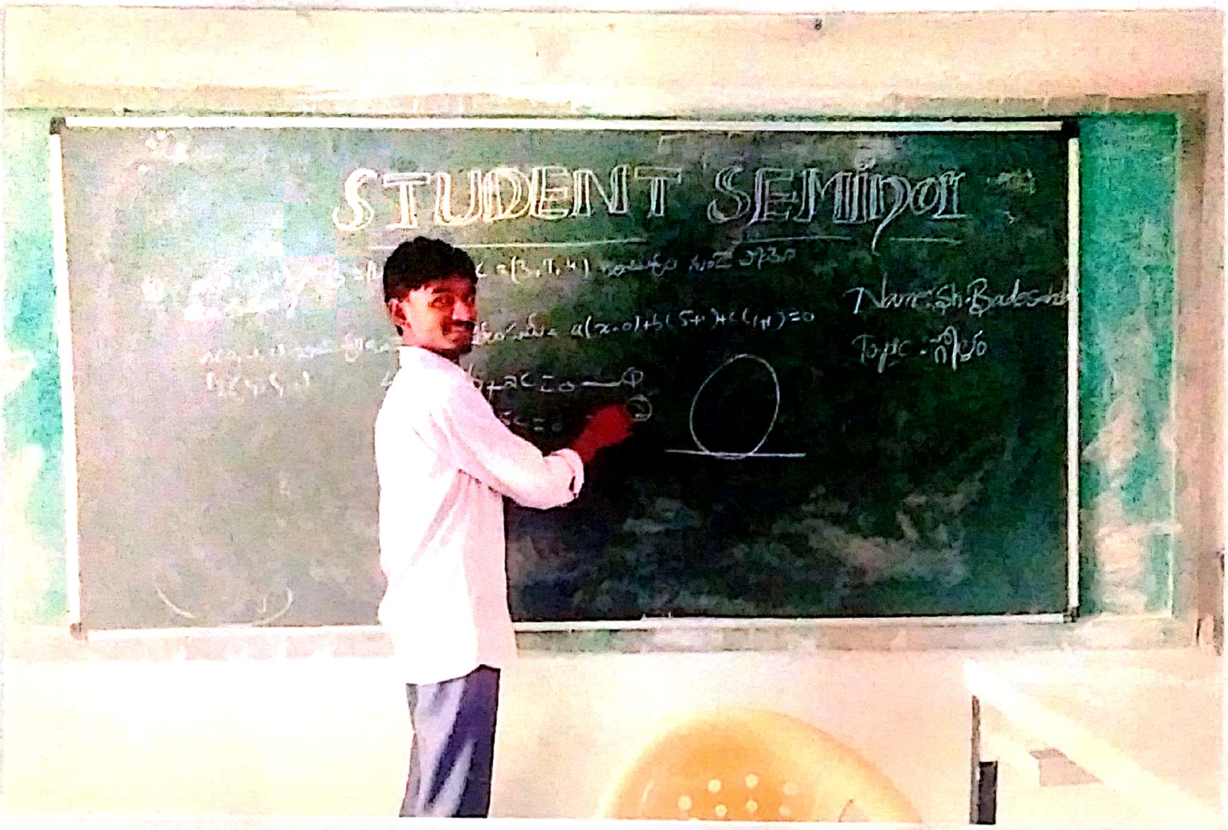

NAME:- SK. Bade Sahab.

TOPIC:- Cones

DATE:- Feb-5

CLASS:- BSC (III), VI Sem

Problem:- A sphere of constant radius k passes through the origin and cuts the axes in A, B and C. Find the locus of the centroid of the triangle ABC.

A sphere of constants of A, B and C be $(a,0,0)$, $(0,b,0)$ and $(0,0,c)$ respectively. The sphere also passes through the origin $(0,0,0)$

Let the equation of the sphere be

$x^2+y^2+z^2+2ux+2vy+2wz+d=0.$

It passes through $(0,0,0)$, $(a,0,0)$, $(0,b,0)$ and $(0,0,c)$

have $d=0$,

$a^2+2ua+d=0 \Rightarrow u=-\frac{1}{2}a,\ v=-\frac{1}{2}b,\ w=-\frac{1}{2}c$

∴ Required equation of sphere is

$$x^2+y^2+z^2-ax-by-cz=0.$$

∴ radius $=\sqrt{\left(\frac{1}{2}a\right)^2+\left(\frac{1}{2}b\right)^2+\left(\frac{1}{2}c\right)^2}=K.$

$a^2+b^2+c^2=4K^2.$

Topic :- కొట్టివేత న్యాయాలు సిద్ధాంతం :

Proof :- 'G' ఒక సమూహం అనుకుందాం. అందు

i) $ba = ca$

a మూలకం విలోమం a' అనుకుందాం

a' ని ఇరువైపులా కుడివైపు పరిచయం చేయగా

$(ba)a' = (ca)a'$

$b(aa') = c(aa')$ [∵ సహ

$b.1 = c.1$ [∵ aa'

$\Rightarrow b = c$

ii) $ab = ac$

a' ని ఇరువైపులా ఎడమవైపు పరిచయం చేయగా

$a'(ab) = a'(ac)$ [∵ సహ

$(a'a)b = (a'a)c$ [∵ a'

$1.b = 1.c$

$\Rightarrow b = c$

∴ G అనే సమూహం కొట్టివేత న్యాయాలు సిద్ధాంతం

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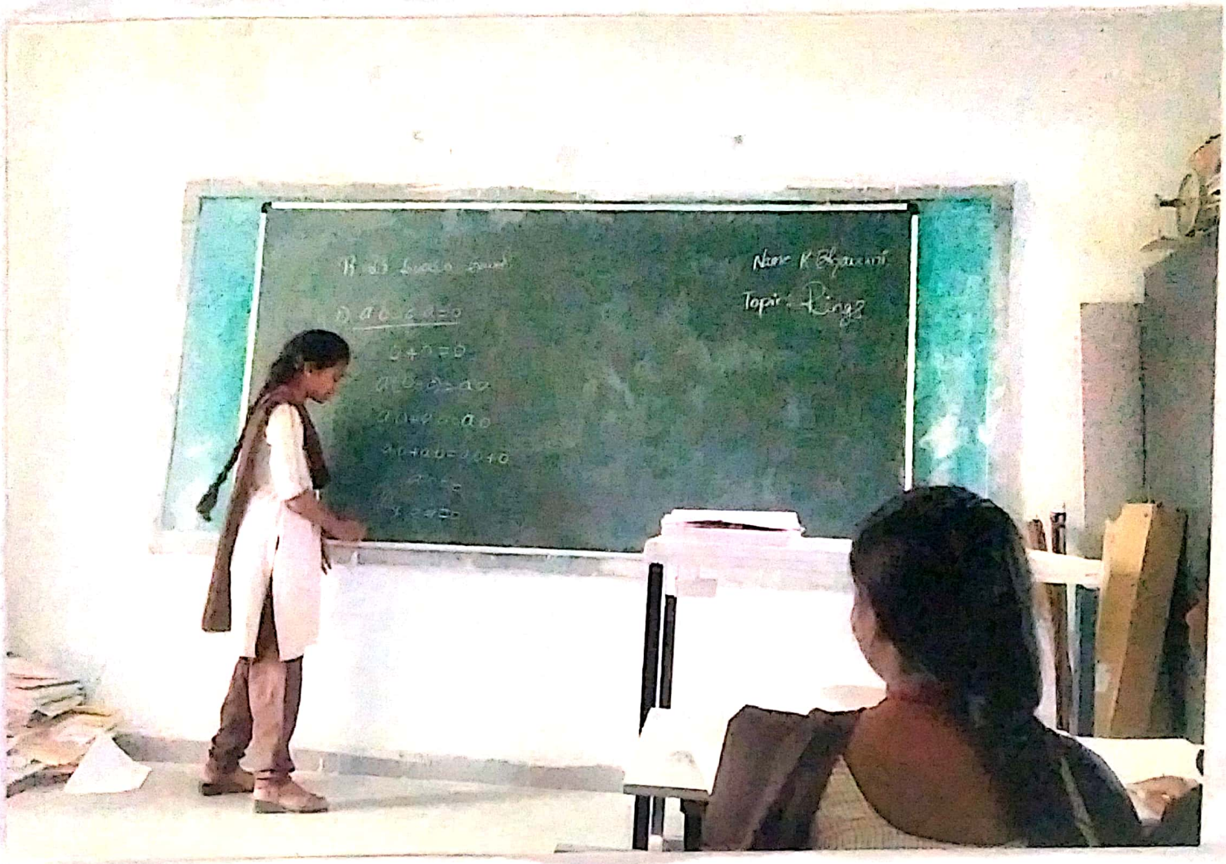
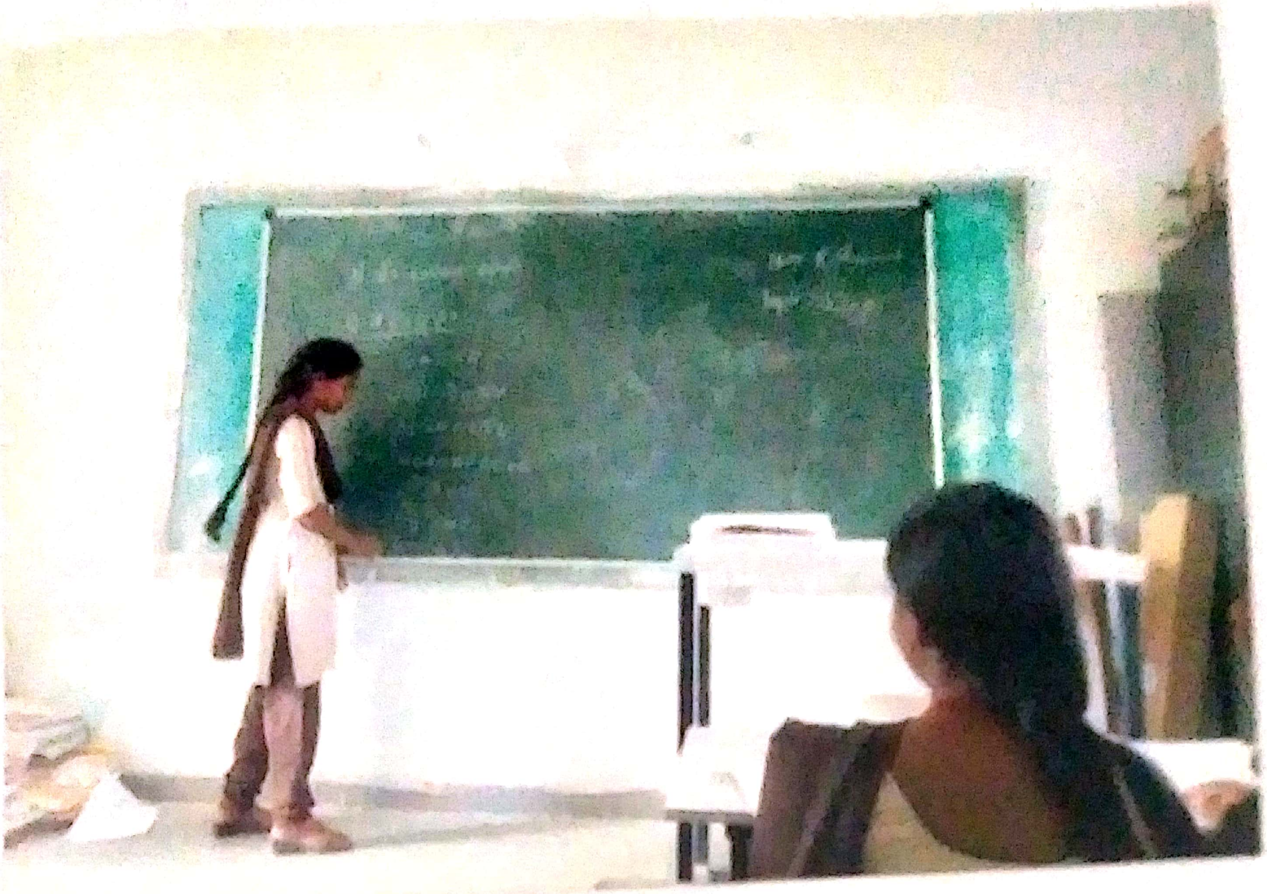


NAME :- K. Bhavani

TOPIC :- Cancellation Laws.

DATE :- 19-2-2019

CLASS :- BSC (II), IIIrd Sem



NAME :- K. Bhavani

TOPIC :- Cancellation Laws.

DATE :- 19-2-2019

CLASS :- Bsc (II), IIIrd Sem

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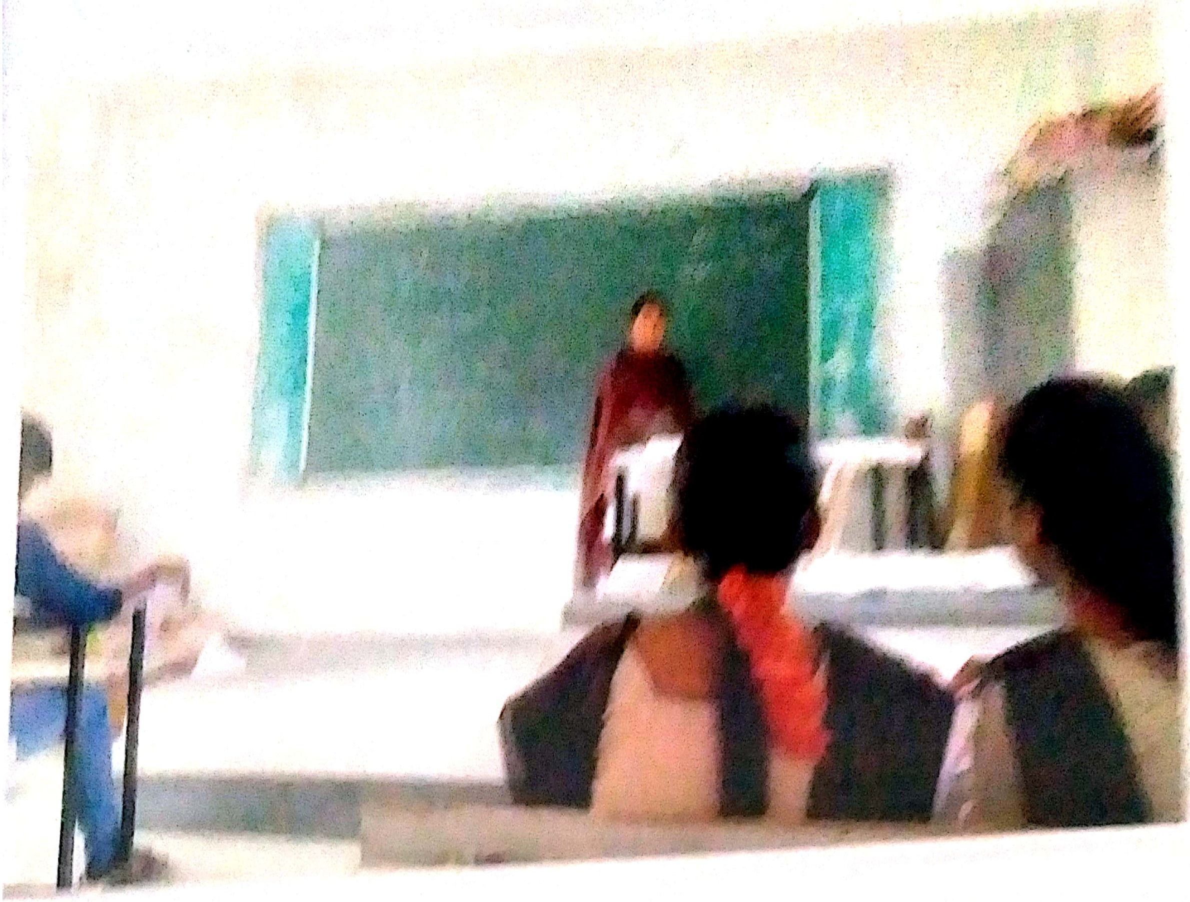
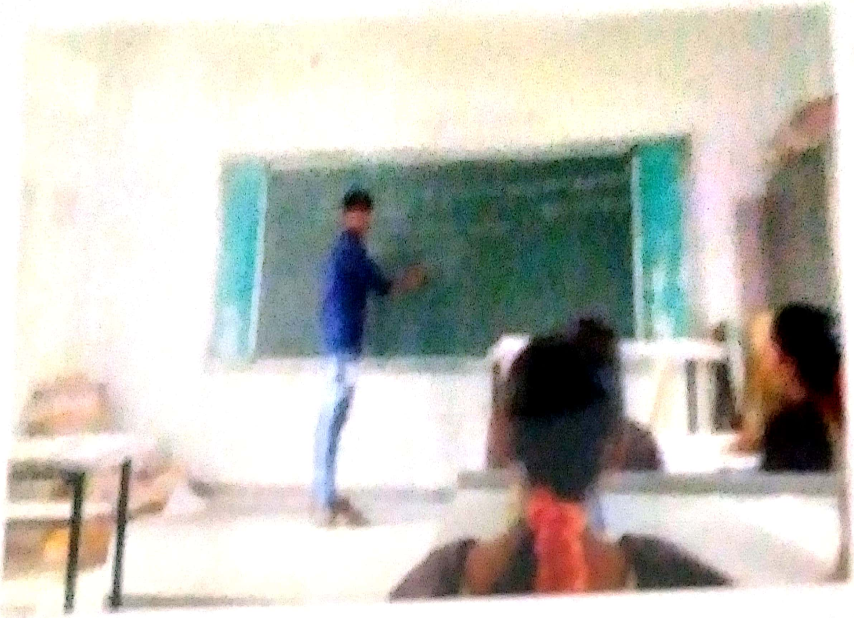


NAME :- S. Ribkha

TOPIC :- Cancellation laws.

DATE :- March - 5

CLASS :- BSC (II), IV Sem



NAME :- A. Raju Rao

TOPIC :- Sub groups 4

DATE :-

CLASS :- BSc (II), [illegible]

⑤ Maclaurin's theorem :-

Statement :- let $f : [a, b] \to R$ such that

(i) f^{n-1} is continuous on $[0, h]$

(ii) f^n is differentiable on $(0, h)$.

(iii) p is a Positive Integer.

$f \exists x \in (0, h) \Rightarrow f(x) = f(0) + x . f'(0) + \frac{x^2}{2!} f''(0)$

$+ \cdots + \frac{x^{n-1}}{(n-1)!} f^{n-1}(0) + x^n . \frac{(1-\theta)^{n-1}}{p(n-1)!} f^n(\theta x)$

Proof :- Given that from eq (1).

$f . f' . f^2 \cdots f^{n-2}$ is continuous on $[0, h]$.

$\phi : [a, a+h] \to R$ define by

$\phi(x) = f(x) + (a+h-x) f'(x) + \frac{(a+h-x)^2}{2!} f''(x)$

$+ \cdots + \frac{(a+h-x)^{n-1}}{n-1} f^{n-1}(x) + A(a+h-x)^p = f(a+h)$

$\to (1)$

put $x = a$ in eq ①.

$\phi(a) = f(a) + h f'(x) + \frac{h^2}{2!} f''(x) + \cdots + \frac{h^{n-1}}{n-1} f^{n-1}(a) +$

$+ A(h)^p = f(a+h) \to ②$.

i) ϕ is continuous

ii) ϕ is differentiable.

iii) $\phi(a) = \phi(a+h)$

ϕ is satisfies all the conditions of the Rolle's theorem.

$\exists c \in (a, a+h) \Rightarrow \phi'(c) = 0$.

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Student Seminar - III

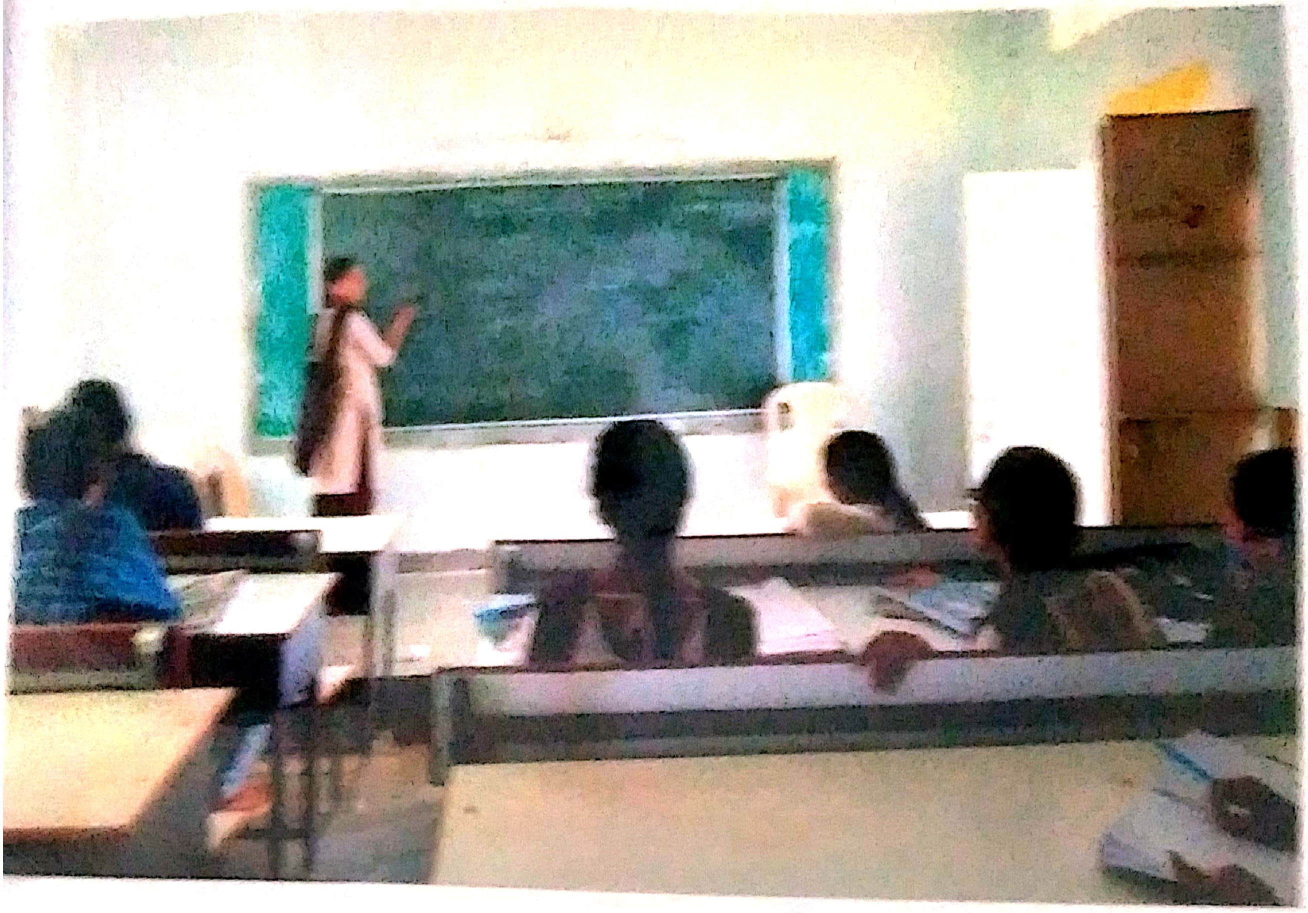
NAME := J. Pavani

GROUP := I. B.Sc [M.P.C]

Subject := maths

Topic := variation of parameters.

CH. NO := 4301 - 19 - 4101.



NAME:- G. Pavani

TOPIC:- Groups & Differentiation

DATE:- Jan 28

CLASS:- BSC (II)

Solve $y_1 = x^2$. $x^2y'' - 4xy' + 6y = 0$.

The given equation is $x^2y'' - 4xy' + 6y = 0 \rightarrow (1)$.

Compare eq (1) to general equation $a_2y'' + a_1y' + a_0y = 0$.

$a_2 = x^2$, $a_1 = -4x$, $a_0 = 6$

$$u(x) = \frac{e^{-\int \frac{a_1}{a_2} dx}}{y_1^2}$$

$$= \frac{e^{-\int \frac{-4x}{x^2} dx}}{x^4}$$

$$u(x) = \frac{x^4}{x^4}$$

$$u(x) = 1$$

$$y_2(x) = y_1(x) \int u(x)\, dx$$

$$= x^2 \int 1\, dx$$

$$y_2(x) = x^3$$

$$y = c_1y_1 + c_2y_2$$

$$\therefore y = c_1x^2 + c_2x^3$$

Solve $y_1 = x^2$, x^2

The given equation is

Compare eq (1) to gen

$a_2 = x^2$, $a_1 =$

$$u(x) = \frac{e^{-\int \frac{a_1}{a_2}}}{y_1^2}$$

$$= \frac{e^{-\int \frac{-4}{x}}}{x^4}$$

$$u(x) = \frac{x^4}{x^4}$$

$$u(x) = 1$$

$$y_2(x) = y_1(x) \int u$$

$$= x^2 \int 1 \, dx$$

$$y_2(x) = x^3$$

$$y = c_1 y_1 + c_2 y_2$$

$$\therefore y = c_1 x^2 + c_2 x^3$$

Name of the stu

S. Shailaja

M. Sindhu

K. Sailaja

V. Ramadevi

J. Pavani

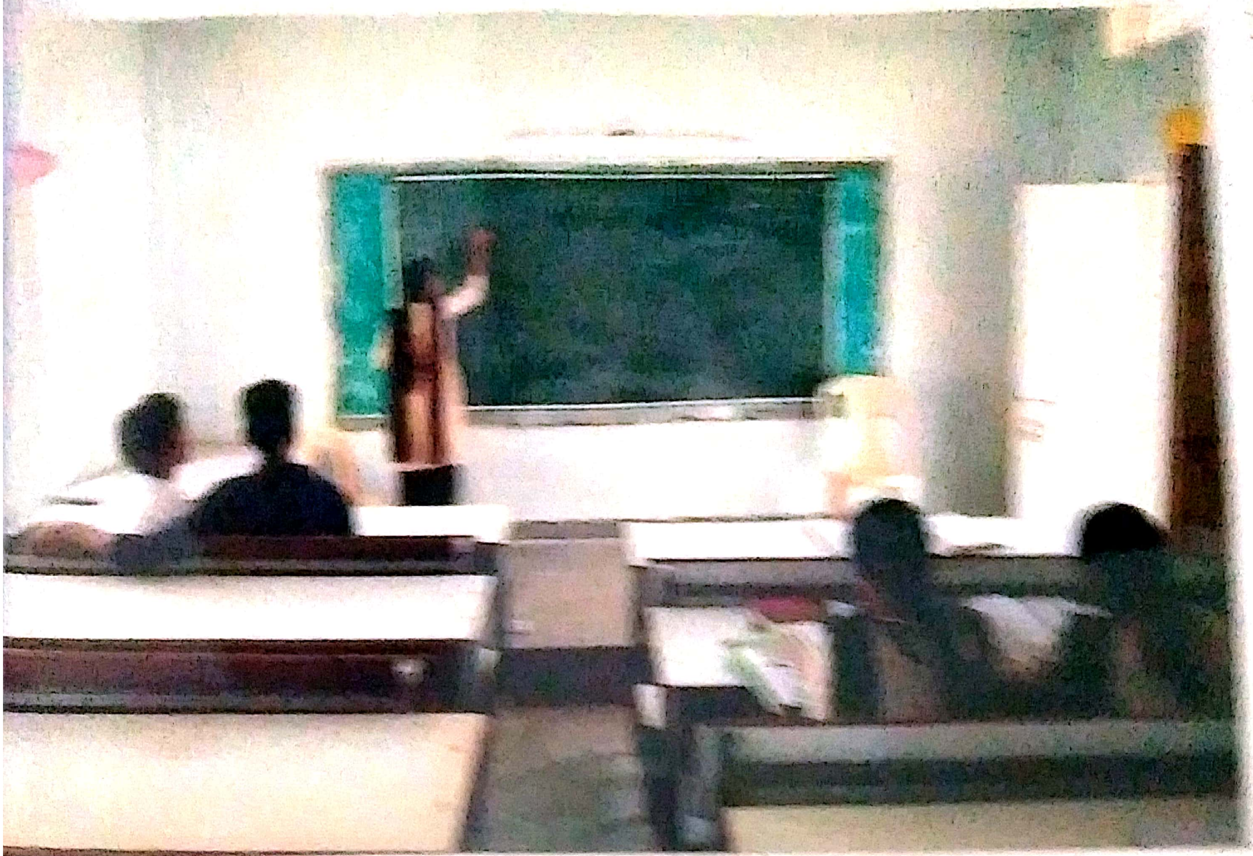
P. Anjali

B. Prashanthi

MD. ARIF

P. Rajesh

Rakesh



NAME :- [illegible]

TOPIC :- Differential Equations

DATE :- Feb 26

CLASS :- BSc (I), II sem

(1) $\frac{dy}{dx} + y\tan x = y^3 \sec x$

Sol: The given equation $\frac{dy}{dx} + y\tan x = y^3 \sec x$ is bernoulli equation ——— (1)

$$\frac{1}{y^3}\frac{dy}{dx} + \cancel{y}\frac{\tan x}{y^{\cancel{3}}} = \sec x$$

$$\frac{1}{y^3}\frac{dy}{dx} + \frac{\tan x}{y^2} = \sec x \quad \text{——— (2)}$$

$$z = 1/y^2$$

$$\frac{dz}{dx} = -2/y^3 \, dy/dx$$

$$-1/2 \frac{dz}{dx} = 1/y^3 \frac{dy}{dx}$$

from equation (2)

$$-1/2 \frac{dz}{dx} + (\tan x) z = \sec x$$

$$\frac{dz}{dx} - 2z\tan x = -2\sec x$$

This is Linear equation in 'z'

$$P = -2\tan x \quad Q = -2\sec x$$

$$I.F = e^{\int P dx}$$

$$= e^{\int -2\sec x}$$

$$= e^{-2\log \sec x}$$

$$= e^{\log \sec^{-2} x}$$

$$= \sec x^{-2}$$

$$= \frac{1}{\sec^2 x} = \cos^2 x$$

1) $(D^3-D^2-6D)y = x^2+1$

Sol: $(D^3-D^2-6D)y = x^2+1 \rightarrow ①$

$\phi(m)=0 \quad (m^3-m^2-6)y = x^2+1$

$m(m^2-m-6)=0$

$m=0, \quad m^2-m-6=0$

$m^2-3m+2=0$

$m(m-3)+2(m-3)=0$

$(m-3)(m+2)=0$

$m=-2, 3$

$y_c = c_1e^{0x}+c_2e^{-2x}+c_3e^{3x}$

$$y_p = \frac{1}{D^3-D^2-6D}(x^2+1)$$

$$\frac{1}{D^3-D^2-6D}x^2 + \frac{1}{D^3-D^2-6D}1$$

$$\frac{1}{-6\left[1+\frac{(D^3-D^2)}{6}\right]}x^2 + \frac{1}{-6\left[1+(D^3-D^2)\right]}e^{0x}$$

$$\frac{-1}{6D}\left[1-\frac{(D^3-D^2)}{6}\right]^{-1}x^2 + \frac{1}{6D}\left[1-\frac{(D^3}{6}\right.$$

$$\frac{-1}{6D}\left[1+\frac{(D^3-D^2)}{6D}+\left(\frac{D^3-D^2}{6D}\right)^2\right]x^2$$

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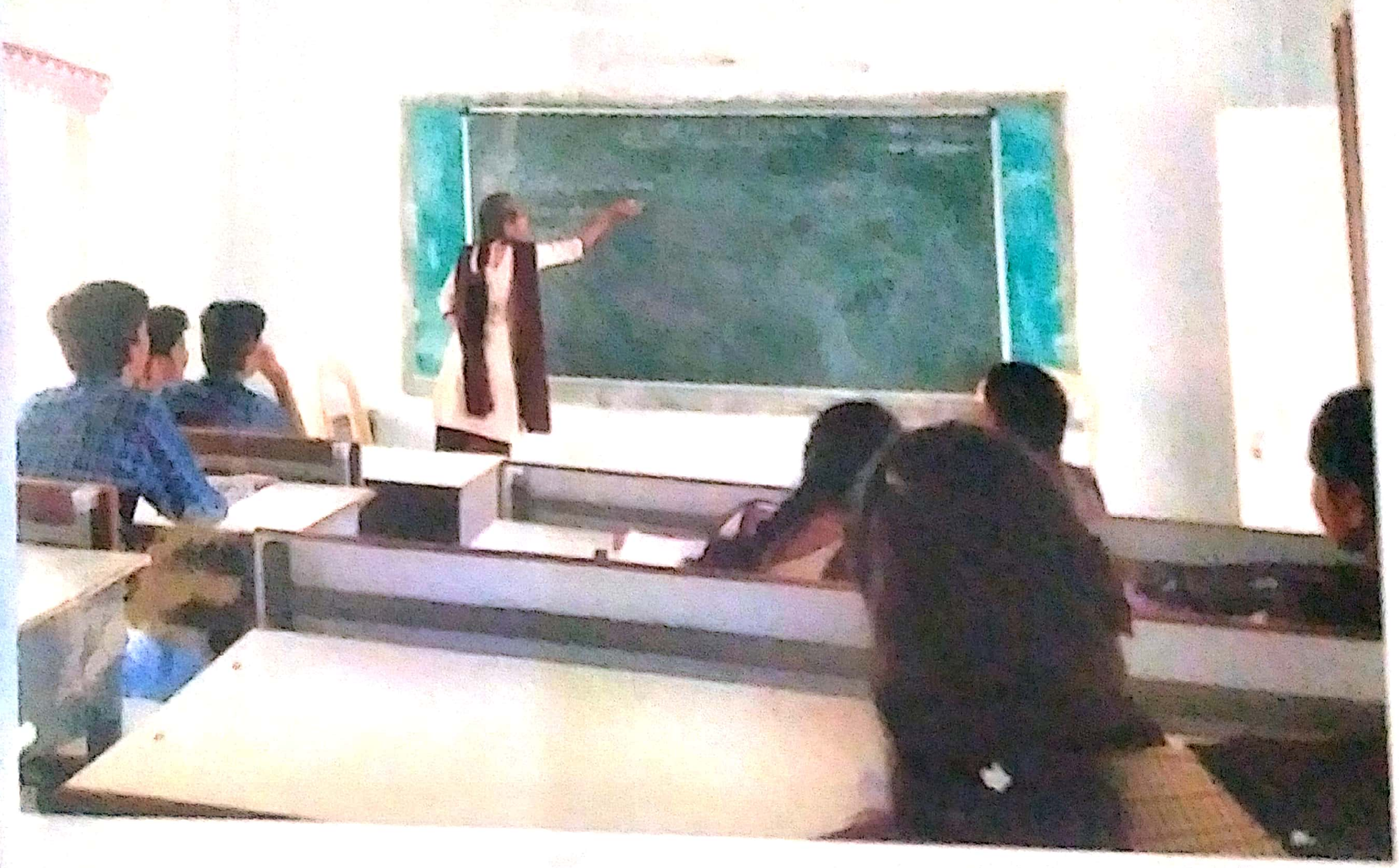

NAME: Ramadevi

CLASS :- BSc (I), march 12

Topic :- Euler's method

DATE :- II sem

PRINCIPAL
Govt Degree College, Manuguru
Bhadradri Kothagudem Dist
Telangana State

V. Ramadevi

If $u = \sin^{-1}\left[\frac{x^2+y^2}{x+y}\right]$ then show that $x\frac{du}{dx}+y\frac{du}{dy} = \tan u$

$$z = \sin u = \left[\frac{x^2+y^2}{x+y}\right]$$

$$\sin u = z = \frac{x^2\left[1+(y/x)^2\right]}{x\left(1+y/x\right)}$$

$$z = x^1 f(y/x)$$

$$n = 1$$

from eulers theorem.

$$\boxed{x\frac{dz}{dx}+y\frac{dz}{dy} = nz}$$

$$x\frac{d}{dx}(\sin u)+y\frac{d}{dy}(\sin u) = 1.\sin u.$$

$$x\cos u\frac{du}{dx}+y\cos u\frac{du}{dy} = \sin u.$$

$$x\frac{du}{dx}+y\frac{dy}{dy} = \frac{\sin u}{\cos u}.$$

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

STUDENT SEMINARS


SEMINAR


SEMINAR


SEMINAR