

**SHIVAJI COLLEGE, UNIVERSITY OF DELHI**  
**DEPARTMENT OF MATHEMATICS**  
**Internal Assignment Class Test**  
**(Academic Year 2023-24)**

Name of the Course: B. Sc. (H) Mathematics

Semester: IV

Name of the Paper: Numerical Analysis (DSC-12)

Maximum Marks: 12

Faculty Name: Dr. Chandra Prakash

Instruction of Submission:

**Name of Candidate:**

**Date:**

**Signature:**

**Attempt any Four questions**

**Q1.** Define the Rate of convergence and order of convergence.

Show that the convergence of the sequence generated by the

formula  $x_{n+1} = \frac{x_n^3 + 3x_n a}{3x_n^2 + a}$

towards  $\sqrt{a}$  is third order. What is the asymptotic error constant?

**Q2.** Find an approximate root for the equation  $f(x) = x \sin x - 1 = 0$  using Regula-Falsi method. Do 5 iterations.

*Chandra Prakash*



**Q3.** Use secant method to find an approximate root of the equation  $f(x) = x^2 - 2x + 1 = 0$  starting with  $x_0 = 2.6$  and  $x_1 = 2.5$ . Do two iterations. Compare the results with the exact root  $1 + \sqrt{2}$ .

**Q4.** The equation  $x^7 = 3$  has a root on the interval  $(1, 2)$ . Perform 4 iterations of Newton's method.

**Q5.** Solve the following system of equations using Jacobi method Gauss Seidel method:

$$4x_1 - x_2 + 0x_3 = 2$$

$$-x_1 + 4x_2 - x_3 = 4$$

$$-x_2 + 4x_3 = 10$$

**Q6.** Find an LU decomposition of the matrix  $A =$

$$\begin{bmatrix} 1 & 4 & 3 \\ 2 & 7 & 9 \\ 3 & 8 & 2 \end{bmatrix} \text{ and use it to solve the equation } AX = [1, 2, 8]^T.$$

For Jacobi Method, calculate  $T_{jac}$  and  $C_{jac}$  and the spectral radius of the coefficient matrix of the following system

$$\begin{bmatrix} 2 & 3 \\ 4 & 5 \end{bmatrix} X = \begin{bmatrix} 1 \\ 3 \end{bmatrix}.$$

**Q7.** Consider the following table:

X	-7	-5	-4	-1
F(x)	10	5	2	10

Use Newton divided difference formula to calculate the interpolating polynomial.

*Chandee P. Babu*



SHIVAJI COLLEGE, UNIVERSITY OF DELHI  
DEPARTMENT OF MATHEMATICS

Internal Assignment

Class Test-2

(Academic Year 2023-24)

Name of the Course: B. Sc. (H) Mathematics

Semester: IV

Name of the Paper: Numerical Analysis (DSC-12)

Maximum Marks: 12

Faculty Name: Dr. Chandra Prakash

Instruction of Submission:

Name of Candidate:

Date: 03/05/2024

Signature:

Answer any four questions; the marks for each of them are the same.

**Q1.** Define the Rate of convergence, order of convergence and asymptotic error.

**Q2.** Find an approximate root for the equation  $x^3 - 2x - 5 = 0$  using Regula-Falsi method. Do 5 iterations.

Chandra Prakash



**Q3.** Use secant method to find an approximate root of the equation  $f(x) = x^2 - 2x + 1 = 0$  starting with  $x_0 = 2.6$  and  $x_1 = 2.5$  Do two iterations. Compare the results with the exact root  $1 + \sqrt{2}$ .

**Q4.** Find a real root of the equation  $3x = \cos x + 2$  using Newton's method.

**Q5.** Solve the following system of equations using Jacobi method  
Gauss Seidel method:

$$6x_1 - x_2 + 0x_3 = 2$$

$$-2x_1 + 4x_2 - 3x_3 = 4$$

$$-x_2 + 4x_3 = 10$$

**Q7.** Solve the given equation  $f(x) = x^3 + x^2 + x + 6 = 0$  by Secant method.

*Chaudhary Babar*



SHIVAJI COLLEGE, UNIVERSITY OF DELHI

DEPARTMENT OF MATHEMATICS

Internal Assignment - Assignment

(Academic Year 2023-24)

**Name of the Course: B. Sc. (H) Mathematics**

**Semester: IV**

**Name of the Paper: Numerical Analysis**

**Maximum Marks: 12**

**Faculty Name: Dr. Chandra Prakash**

**Instruction of Submission: Date of Submission (26/04/2024) in Hard copy**

**Q1.** Verify that each of the following equations has a root on the interval  $(0,1)$ . Next perform the Bisection method to determine  $p_5$ , the fifth approximation to location of root, and to determine  $(a_6, b_6)$ , the next enclosing interval. (a)  $e^x - x = 0$ , (b)  $\ln(1+x) - \cos x = 0$ .

**Q2.** Verify that each approximation satisfies the theoretical error bound of the Bisection method: (a)  $f(x) = x^3 + x^2 - 3x - 3$ ,  $(1, 2)$ , the exact value of  $p = \sqrt{3}$ .

**Q3.** Approximation  $\sqrt[3]{13}$  to three decimal places by applying the Bisection method to the equation  $x^3 - 13 = 0$ .

**Q4.** Perform first five iterations of the method of false position. Verify the absolute error in third, fourth, fifth approximation satisfies the error estimate. The equation  $x^3 + x^2 - 3x - 3 = 0$  has a root interval  $(1, 2)$  namely  $x = \sqrt{3}$ .

**Q5.** Verify that  $x = \sqrt{a}$  is a fixed point of a function  $g(x) = \frac{1}{2}\left(x + \frac{a}{x}\right)$  use the techniques of this section to determine order of convergence and asymptotic error constant of the sequence  $p_n = g(p_{n-1})$  towards  $x = \sqrt{a}$ .

*Chandra Prakash*



**Q6.** Perform five iterations of Newton's method the equation  $x^7 = 3$  has a root on the interval  $(1, 2)$  namely  $x = \sqrt[7]{3}$ .

**Q7.** Verify that the equation  $x^4 - 18x^2 + 45 = 0$  has a root on the interval  $(1, 2)$ . Next perform five iterations of Secant method using  $p_0 = 1$  and  $p_1 = 2$ .

**Q8.** Find an LU decomposition of the matrix  $A = \begin{bmatrix} 1 & 4 & 3 \\ 2 & 7 & 9 \\ 3 & 8 & 2 \end{bmatrix}$  and use it to solve the equation  $AX = [1, 2, 8]^T$ . For Jacobi Method, calculate  $T_{jac}$  and  $C_{jac}$  and the spectral radius of the coefficient matrix of the following system  $\begin{bmatrix} 2 & 3 \\ 4 & 5 \end{bmatrix} X = \begin{bmatrix} 1 \\ 3 \end{bmatrix}$ .

**Q9.** Use both Jacobi method and the Gauss-Seidel method to solve the indicated linear system of equations:

$$4x_1 - x_2 + 0x_3 = 2$$

$$-x_1 + 4x_2 - x_3 = 4$$

$$-x_2 + 4x_3 = 10$$

**Q10.** Solve the following system of equations

$$3x - y + 2z = 8$$

$$x + y + 2z = 4$$

$$2x - 2y - z = 12$$

Using Gauss Seidel method.

**Q11.** Consider the following table:

X	0.1	0.2	0.3	0.4	0.5
F(x)	1.40	1.56	1.76	2.00	2.28

Use Newton divided difference formula to calculate the interpolating polynomial and give an estimate for  $(0.25)$ .

**Q12.** Find the unique polynomial  $P(x)$  of degree 2 or less such that  $P(1)=1$ ,

$P(3)=27$ ,  $P(4)=64$ , using Lagrange interpolating formula, Estimate  $P(1.5)$ .

*Chaudhary Pankaj*



Q13. Find the interpolating polynomial for

X	0	0.5	1	3.5
y	1	2	1	0

In piecewise linear form.

Q14. Derive the following forward difference approximation for the second derivative  $f''(x) \approx \frac{f(x_0) - 2f(x_0+h) + f(x_0+2h)}{h^2}$

(a) What is the error term associated with this formula?

(b) Numerically verify the order of approximation using  $f(x) = e^x$  and  $x_0 = 0$ .

Q15. Using Newton's forward find the value of  $f(1.6)$ , if

X	1	1.4	1.8	2.2
F(x)	3.49	4.82	5.96	6.5

Chander Prakash



SHIVAJI COLLEGE, UNIVERSITY OF DELHI

DEPARTMENT OF MATHEMATICS

Internal Assignment - Assignment

(Academic Year 2023-24)

**Name of the Course: B. Sc. (H) Mathematics**

**Semester: IV**

**Name of the Paper: Multivariate Calculus**

**Maximum Marks: 12**

**Faculty Name: Dr. Chandra Prakash**

**Instruction of Submission: Date of Submission (08/05/2024) in Hard copy**

**Q1. (a)** Let  $f(x, y) = \begin{cases} \frac{x^2 y^2}{x^2 + y^2}, & \text{for } (x, y) \neq (0, 0) \\ 0, & \text{for } (x, y) = (0, 0) \end{cases}$

Given that  $f(x, y)$  has a limit at  $(0, 0)$ , is  $f$  continuous there?

**(b)** Let  $f(x, y) = \begin{cases} xy \frac{x^2 y^2}{x^2 + y^2}, & \text{if } (x, y) \neq (0, 0) \\ 0, & \text{if } (x, y) = (0, 0) \end{cases}$

Show that  $f_x(0, y) = -y$  and  $f_y(x, 0) = x$ , for all  $x$  and  $y$ . Then show that  $f_{xy}(0, 0) = -1$  and  $f_{yx}(0, 0) = 1$ .

**Q2.** Use an incremental approximation to estimate the functions at the values

(a)  $f(1.01, 2.03)$  where  $f(x, y) = 3x^4 + 2y^4$

(b)  $f(1.01, 0.98)$ , where  $f(x, y) = e^{x^2 y^2}$ .

**Q3.** Let  $w = f(t)$  be a differentiable function of  $t$ , where  $t = \sqrt{x^2 + y^2 + z^2}$ .

Show that  $\left(\frac{dw}{dt}\right)^2 = \left(\frac{\partial w}{\partial x}\right)^2 + \left(\frac{\partial w}{\partial y}\right)^2 + \left(\frac{\partial w}{\partial z}\right)^2$ .

**Q4.** Let  $R$  be the triangular region in the  $xy$ -plane with vertices  $(-1, -2)$ ,  $(-1, 2)$ , and  $(3, 2)$ . A plate in the shape of  $R$  is heated so that the temperature at  $(x, y)$  is

*Chandra Prakash*





$T(x, y) = 2x^2 - xy + y^2 - 2y + 1$  (in degree celsius). At what point in  $R$  or on its boundary is  $T$  maximized? Where is  $T$  minimized? What are the extreme temperatures?

**Q5.** Use the method of Lagrange multipliers to find the required constrained extrema? Minimize  $f(x, y, z) = x^2 + y^2 + z^2$  subject to  $4x^2 + 2y^2 + z^2 = 4$ .

**Q6.** Compute  $\iint \frac{xy}{x^2 + y^2} dA$

Where  $R$  is the rectangular  $1 \leq x \leq 3, 1 \leq y \leq 2$ .

**Q7. (a)** Explain why  $\iint_R (4 - x^2 - y^2) dA > 2$ , where  $R$  is the rectangular domain in the plane given by  $0 \leq x \leq 1, 0 \leq y \leq 1$ .

**(b)** Find the volume of the solid bounded by the ellipsoid  $\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1$ .

And also evaluate the following integral by converting to polar coordinates

$$\int_0^2 \int_y^{\sqrt{8-y^2}} \frac{1}{\sqrt{1+x^2+y^2}} dx dy.$$

**Q8.** Find the volume of the tetrahedron  $T$  bounded by the plane  $2x + y + 3z = 6$  and the coordinate planes  $x=0, y=0, z=0$ .

**Q9.** Evaluate the triple integrals  $\iiint e^z dV$ , where the region is bounded by  $0 \leq x \leq 1, 0 \leq y \leq x, 0 \leq z \leq x + y$ .

**Q10.** Use cylindrical coordinates to compute the integral

$\iiint z(x^2 + y^2)^{-\frac{1}{2}} dx dy dz$  Where the region is the solid bounded above by the plane  $z=2$  and below by the surface  $2z = x^2 + y^2$ .

**Q11.** Evaluate  $\iint \ln\left(\frac{x-y}{x+y}\right) dy dx$ , where  $R$  is the triangular region with vertices  $(1, 0), (4, -3)$  and  $(4, 1)$ .

**Q12. (a)** Find  $\text{Div } F$ , given that  $F = \nabla f$ , where  $f(x, y, z) = xy^3z^2$ .

**(b)** Find  $\text{curl } F$ , given that  $F(x, y, z) = \cos y \mathbf{i} + \sin y \mathbf{j} + k$  at  $\left(\frac{\pi}{4}, \pi, 0\right)$ .

*Chandra P. K.*



**SHIVAJI COLLEGE, UNIVERSITY OF DELHI**  
**DEPARTMENT OF MATHEMATICS**  
**Internal Assignment Presentation Proforma**  
**(Academic Year 2023-24)**

Name of the Course: B. Sc. (H) Mathematics

Semester: IV

Name of the Paper: Multivariate Calculus

Maximum Marks: 35

Faculty Name: Mr. Chandra Prakash

Instruction of Submission: Hard copy + Soft copy in PDF format

Sr. No.	Problem	Roll Numbers	Last Date
1.	11.2	17076	12/03/2024
2.	11.5	17070 & 17055	13/03/2024
3.	11.2	17078	15/03/2024
4.	11.1	17063 & 17051	18/03/2024
5.	11.3 (1-20)	17068	19/03/2024
6.	11.3 (21-50)	17058	20/03/2024
7.	11.4 (1-20)	17095	21/03/2024
8.	11.4 (20-40)	17074	22/03/2024
9.	11.3 (51-60)	17085	23/03/2024
10.	11.6	17059 & 17073	02/04/2024
11.	11.7	17086 & 17079	04/04/2024
12.	11.8	17096 & 17081	06/04/2024
13.	Miscellaneous Exercise	17080, 17062 & 17065	10/04/2024
15	Any exercise	All students	

Faculty Name

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SHIVAJI COLLEGE, UNIVERSITY OF DELHI

DEPARTMENT OF MATHEMATICS

Internal Assignment Class Test

(Academic Year 2023-24)

Name of the Course: B. Sc. (H) Mathematics

Semester: IV

Name of the Paper: Multivariate Calculus

Maximum Marks: 12

Faculty Name: Dr. Chandra Prakash

Date: 09/05/2024

Instruction of Submission:

**Attempt any two questions, each carry equal marks:**

**Q1.** Compute  $\iint_D \left(\frac{x-y}{x+y}\right)^4 dydx$ , where D is the triangular region bounded by the line  $x + y = 1$  and the coordinate axes.

**Q2.** Evaluate  $\iiint_D \frac{dxdydz}{\sqrt{x^2+y^2+z^2}}$ , where D is the solid sphere  $x^2 + y^2 + z^2 \leq 3$ .

**Q3.** Evaluate the integral  $\int_{-1}^1 \int_{-\sqrt{1-x^2}}^{\sqrt{1-x^2}} \int_{x^2+y^2}^{\sqrt{2-x^2-y^2}} zdzdydx$  under the given rectangular form.

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**SHIVAJI COLLEGE, UNIVERSITY OF DELHI**  
**DEPARTMENT OF MATHEMATICS**  
**Internal Assignment Class Test**  
**(Academic Year 2023-24)**

Name of the Course: B. Sc. (H) Mathematics

Semester: IV

Name of the Paper: Multivariate Calculus

Maximum Marks: 12

Faculty Name: Dr. Chandra Prakash

Date: 23/04/2024

Instruction of Submission:

**Attempt any six questions**

**Q1.** Let  $f$  be a function defined by

$$f(x, y) = \begin{cases} \frac{xy^3}{x^2+y^6}, & \text{for } (x, y) \neq 0 \\ 0, & \text{for any } (x, y) = 0 \end{cases}$$

Is  $f$  continuous at  $(0, 0)$ ? Explain.

**Q2.** Compute the slope of the tangent line to the graph of  $f(x, y) = x^2 \sin(x + y)$  at the point  $P_0(\frac{\pi}{2}, \frac{\pi}{2}, 0)$  in the direction parallel to the  $yz$ -plane.

**Q3.** (a) Find  $\frac{dw}{dt}$ , where  $w = \ln(x + 2y - z^2)$  and  $x = 2t - 1, y = \frac{1}{t}, z = \sqrt{t}$ .

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(b) Find the maximum and minimum distance from the origin to the ellipse  $5x^2 - 6xy + 5y^2 = 4$ .

**Q4.** Find the directional derivative of  $f(x, y) = e^{x^2y^2}$  at  $P_0(1, -1)$  in the direction towards  $Q(2, 3)$ .

**Q5.** Find the gradient of the function  $f(x, y) = \sin(x + 2y)$ .

**Q6.** Compute  $\iint_R \frac{xy}{x^2+y^2} dA$ , where  $R$  is the rectangle  $1 \leq x \leq 3, 1 \leq y \leq 2$ .

**Q7.** Find the volume of the tetrahedron  $T$  bounded by the plane  $2x + y + 3z = 6$  and the coordinate planes  $x=0, y=0$  and  $z=0$ .

**Q8.** Sketch some level curves of the function  $f(x, y) = 20 - (x^2 + y^2)$ .

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SHIVAJI COLLEGE, UNIVERSITY OF DELHI

DEPARTMENT OF MATHEMATICS

Internal Assignment Presentation Proforma

(Academic Year 2023-24)

NAME OF THE COURSE: VALUE ADDITION COURSE (VAC)

SEMESTER: IV

NAME OF THE PAPER: VEDIC MATHEMATICS-II

MAXIMUM MARKS: 4

FACULTY NAME: DR. CHANDRA PRAKASH

INSTRUCTION OF SUBMISSION: HARD COPY

1. Solve the following questions:

A.  $3x + 7 = 5x + 1$

B.  $(x + 11)(x - 2) = (x + 1)(x - 3)$

C.  $(2x + 1)(2x - 1) = (2x + 3)(2x - 3)$

D.  $\frac{1}{5x+1} + \frac{2}{5x+3} = 0$

E.  $\frac{3x+5}{3x+7} = \frac{3x+7}{3x+5}$

2. Solve the following pair of equations:

A.  $2x + 3y = 7; 3x + 7y = 13$

B.  $4x + 7y = 29; 12x + 3y = -3$

C.  $23x + 31y = 18; 31x + 23y = 90$

D.  $27x + 144y = 720; 42x + 72y = 360$

E.  $699x + 845y = 5477; 845x + 699y = 5331$

3. Find the determinant of the following matrices:

A.  $\begin{bmatrix} 1 & 2 & 4 \\ -1 & 3 & 0 \\ 4 & 1 & 0 \end{bmatrix}$

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B.  $\begin{bmatrix} 0 & \sin \alpha & -\cos \alpha \\ -\sin \alpha & 0 & \sin \beta \\ \cos \alpha & -\sin \beta & 0 \end{bmatrix}$

C.  $\begin{bmatrix} 1 & 3 & -1 & 2 \\ 5 & -1 & 3 & 0 \\ 2 & 4 & 3 & 5 \\ 1 & -1 & 0 & 1 \end{bmatrix}$

D.  $\begin{bmatrix} 1 & 2 & 1 & 0 \\ 4 & -7 & 3 & 5 \\ 1 & -1 & 9 & 1 \\ 10 & 1 & -1 & 7 \end{bmatrix}$

4. Find the inverse of the following matrices:

A.  $\begin{bmatrix} 2 & 4 & -6 \\ 7 & 3 & 5 \\ 1 & -2 & 4 \end{bmatrix}$

B.  $\begin{bmatrix} 1 & 2 & 3 \\ 2 & 4 & 5 \\ 3 & 5 & 6 \end{bmatrix}$

C.  $\begin{bmatrix} 2 & 1 & 3 \\ 4 & -1 & 0 \\ -7 & 2 & 1 \end{bmatrix}$

D. Find the inverse of the matrix  $\begin{bmatrix} 2 & -1 & 1 \\ -1 & 2 & -1 \\ 1 & -1 & 2 \end{bmatrix}$  and hence solve the system of equations:  $2x-y+z=1$ ;  $-x+2y-z=2$ ;  $x-y+2z=1$ .

5. Find the length of perpendicular from (2,3) to  $y = 4x$ .

6. Find the equation of line passing through (1,2) and (3,4).

7. Find the distance between (1,4) and (2,6).

8. Find the coordinates of the point that divides the line segment joining the points (2,5) and (1,9) in the ratio 2:3.

9. Find the angle between the lines  $y - 2x = 5$  and  $3y = x - 2$ .

10. Formulate the method the angle between two lines. Use the technique to find the angle between  $3x - y + 2 = 0$  and  $3y + x = 7$ . Also, mention the sutra used.

11. Find the area of the cycle quadrilateral with sides 36m, 77, 75m and 40m.

12. The sum of the digits of a two-digit number is 8. When the digits are reversed, the number is increased by 18, find the number.



13. Explain the concept to convert an isosceles triangle equal in area to a given square.
14. Given that in a right-angled triangle, the hypotenuse is 17 and the sum of other two sides is 23. What is the length of the base and altitude?
15. The sum of three numbers is 2. If twice the second number is added to the sum of first and third, the sum is 2. By adding second and third number to five times the first number, we get 6. Find the three numbers (Using inverse of matrix by high-speed matrix algebra)

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*Chandraprakash*



# VEDIC MATHEMATICS-II

## UNIT-III

## Assignment

1. Find the determinant of the following matrices.

$$(a) \begin{bmatrix} 1 & 2 & 4 \\ -1 & 3 & 0 \\ 4 & 1 & 0 \end{bmatrix}$$

$$(b) \begin{bmatrix} 0 & \sin \alpha & -\cos \alpha \\ -\sin \alpha & 0 & \sin \beta \\ \cos \alpha & -\sin \beta & 0 \end{bmatrix}$$

$$(c) \begin{bmatrix} 1 & 0 & 1 \\ 0 & 1 & 2 \\ 0 & 0 & 4 \end{bmatrix}$$

$$(d) \begin{bmatrix} 3 & -1 & -2 \\ 0 & 0 & -1 \\ 3 & -5 & 0 \end{bmatrix}$$

$$(e) \begin{bmatrix} 1 & 3 & -1 & 2 \\ 5 & -1 & 3 & 0 \\ 2 & 4 & 3 & 5 \\ 1 & -1 & 0 & 1 \end{bmatrix}$$

$$(f) \begin{bmatrix} 1 & 2 & 1 & 0 \\ 4 & -7 & 3 & 5 \\ 1 & -1 & 9 & 1 \\ 10 & 1 & -1 & 7 \end{bmatrix}$$

2. Find the inverse of the following matrices.

$$(a) \begin{bmatrix} 2 & 4 & -6 \\ 7 & 3 & 5 \\ 1 & -2 & 4 \end{bmatrix}$$

$$(b) \begin{bmatrix} 1 & 2 & 3 \\ 2 & 4 & 5 \\ 3 & 5 & 6 \end{bmatrix}$$

$$(c) \begin{bmatrix} 2 & 1 & 1 \\ 1 & 2 & 1 \\ 1 & 1 & 2 \end{bmatrix}$$

$$(d) \begin{bmatrix} -4 & 8 & 4 \\ -1 & 2 & 1 \\ -3 & 6 & 3 \end{bmatrix}$$

$$(e) \begin{bmatrix} 1 & 2 & 3 \\ 0 & 1 & 4 \\ 5 & 6 & 0 \end{bmatrix}$$

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$$(f) \begin{bmatrix} 2 & 1 & 1 \\ 1 & 1 & 1 \\ 1 & -1 & 2 \end{bmatrix}$$

$$(g) \begin{bmatrix} 6 & 2 & 3 \\ 3 & 1 & 1 \\ 10 & 3 & 4 \end{bmatrix}$$

$$(h) \begin{bmatrix} 1 & 3 & 3 \\ 1 & 4 & 3 \\ 1 & 3 & 4 \end{bmatrix}$$

$$(i) \begin{bmatrix} 1 & -1 & 2 \\ 2 & 3 & 5 \\ -2 & 0 & 1 \end{bmatrix}$$

$$(j) \begin{bmatrix} 2 & 1 & 3 \\ 4 & -1 & 0 \\ -7 & 2 & 1 \end{bmatrix}$$

3. Find the inverse of the matrix  $\begin{bmatrix} 1 & 1 & 2 \\ 0 & 2 & 3 \\ 3 & 2 & 4 \end{bmatrix}$  and hence solve the system of equations

$$x - y + 2z = 1$$

$$2y - 3z = 1$$

$$3x - 2y + 4z = 2.$$

4. Find the inverse of the matrix  $\begin{bmatrix} 2 & -1 & 1 \\ -1 & 2 & -1 \\ 1 & -1 & 2 \end{bmatrix}$  and hence solve the system of equations

$$2x - y + z = 1$$

$$-x + 2y - z = 2$$

$$x - y + 2z = 1.$$

Chandee Pokal



Project

Paper: Vedic Mathematics-II

Submit in hard copy

Date: 7/03/2024

<u>Sr. No.</u>	<u>Name</u>	<u>Roll NO.</u>	
1.	Janhavi S Nambiar	22/06015	<u>Any Indian Mathematician</u>
2.	Abhishek singh	22/17002	<u>Any Indian Mathematician</u>
3.	Ayushman Nagar	22/17023	<u>Any Indian Mathematician</u>
4.	Sakshi	22/17062	<u>Any Indian Mathematician</u>
5.	Yashpal	22/17084	<u>Any Indian Mathematician</u>
6.	Yash chotiya	22/19049	<u>Any Indian Mathematician</u>
7.	Rujula Kathuria	22/2046	<u>Any Indian Mathematician</u>
8.	Tanisha	22/2058	<u>Any Indian Mathematician</u>
9.	Vedansh Singh	22/2062	<u>Any Indian Mathematician</u>
10.	Nayan Kothari	22/28027	<u>Any Indian Mathematician</u>
11.	Simarjeet Singh	22/28043	<u>Any Indian Mathematician</u>
12.	Abhigyan Sahay	22/35002	<u>Any Indian Mathematician</u>
13.	Arunesh Prakash Singh	22/40011	<u>Any Indian Mathematician</u>
14.	Janvi Jainth	22/49022	<u>Any Indian Mathematician</u>
15.	Aryan Kansal	22/51022	<u>Any Indian Mathematician</u>
16.	Joel Chamathil Mohan	22/51055	<u>Any Indian Mathematician</u>
17.	Khyati singh	22/51059	<u>Any Indian Mathematician</u>

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18.	Mehar Mandal	22/51068	<u>Any Indian Mathematician</u>
19.	Prerna pandey	22/51080	<u>Any Indian Mathematician</u>
20.	Rohit	22/51089	<u>Any Indian Mathematician</u>
21.	Mohammad Saad	22/63024	

Chaudhary Rohit



SHIVAJI COLLEGE, UNIVERSITY OF DELHI

DEPARTMENT OF MATHEMATICS

MENTOR-MENTEE MEETING

(Academic Year ~~2023-25~~ (2023-24))


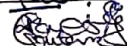
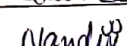
Faculty Name: CHANDRA PRAKASH

Date of Meeting: 29 February 2024

Name of the Course: B.Sc.(H) Maths

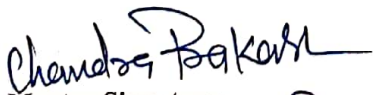
Semesters : EVEN

List of Mentees:

S. No.	Roll No.	Course & Semester	Name of Student	Signature
1.	23/17049	Math(H) II	Niketa Pal	
2.	23/17102	Math(H) II	Pawan Kumar	
3.	23/17048	Math(H) II	Nandini	
4.	2			
5.				
6.				
7.				
8.				
9.				
10.				

Minutes of the Meeting:

- 1- Discussed about GE courses available in the college.
- 2- I talked about semester running courses and students are satisfied also discuss the so far
- 3- listing process for the sec papers.



Mentor Signature:

Dr. Chandra Prakash



SHIVAJI COLLEGE, UNIVERSITY OF DELHI

DEPARTMENT OF MATHEMATICS

MENTOR-MENTEE MEETING

(Academic Year 2023-24)

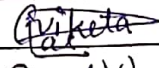
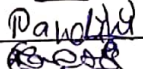
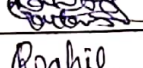
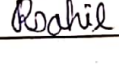
Faculty Name: CHANDRA PRAKASH

Date of Meeting: 20 March 2024

Name of the Course: B.Sc. (H) Mathematics

Semesters : EVEN

List of Mentees:

S. No.	Roll No.	Course & Semester	Name of Student	Signature
1.	23/17049	BSc Math(H)II	Niketa Pal	
2.	23/17048	BSc Math(H)II	Nandini	
3.	23/17102	BSc Math(H)	Pansara Khosla	
4.	23/17143	BSc Math(H)	Raj Sahil	

Minutes of the Meeting:

1. Discussion on the future planning like request to your careers teacher to guide you.
2. How was your classes going on
3. Remedial classes

Mentor Signature:

Dr. Chandra Prakash

Chandra Prakash



SHIVAJI COLLEGE, UNIVERSITY OF DELHI

DEPARTMENT OF MATHEMATICS

MENTOR-MENTEE MEETING

(Academic Year 2023-24)

Faculty Name: Dr. Chandra Prakash

Date of Meeting: 22 April 2024

Name of the Course: B.Sc. (H) Mathematics

Semesters : EVEN

List of Mentees:

S. No.	Roll No.	Course & Semester	Name of Student	Signature
1	23/17100	B.Sc.(H) Maths 2 <sup>nd</sup> Sem	Nishant Gurjar	<i>Gurjar</i>
2.	23/17140	B.Sc.(H) Maths 2 <sup>nd</sup> Sem	Pradeep Sharma	<i>Pradeep Sharma</i>
3	23/17126	B.Sc. (H) Math II	Rahul Kumar	<i>Rahul</i>
4.	23/17143	B.Sc Math (H) II	Raj Sahil	<i>Raj Sahil</i>
5.	23/17049	BSc Math (H) II Sem	Niketa Pal	<i>Niketa Pal</i>
6.)	23/17142	BSc Math II	Prince	<i>Prince</i>

Minutes of the Meeting:

- ① Discussion related to Career and next semester syllabus.
- ② Discussion about tutorial classes and impact of these.

Mentor Signature:

*Chandra Prakash*  
Dr. Chandra Prakash