



**Dr. Harisingh Gour Vishwavidyalaya Sagar (M.P.)**

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13/12/2023  
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9/12/22

D Shukla  
12/12/23  
(Chairman, BOS)

April

12/12/22

Passed by School Board Dated 13/12/20

Passed by Board of Studies Dated 12/12/23

**DOCTOR HARISINGH GOUR VISHWAVIDYALAYA, SAGAR**  
(A Central University)  
**Department of Mathematics and Statistics**

| VDM-OE-101 | Vedic Arithmetic | L                | T | P | C |
|------------|------------------|------------------|---|---|---|
|            |                  | 2                | 0 | 0 | 2 |
|            |                  | Max. Marks : 100 |   |   |   |

Mid Sem-20  
Internal assessment-20  
End Sem-60

**Unit-I: Multiplication**

1. Ekadhikenpurven method (multiplication of two numbers of two digits)
2. Eknunenpurven method (multiplication of two numbers of three digits)
3. Urdhvataragbhyam method (multiplication of two numbers of three digits)
4. Nikhilam Navtashchramam Dashtaha (multiplication of two numbers of three digits)
5. Combined Operations

**Unit-II: Division and Divisibility**

**Part A: Division**

1. Nikhilam Navtashchramam Dashtaha (two digits divisor)
2. Paravartya Yojyet method (three digits divisor)

**Part B: Divisibility**

1. Ekadhikenpurven method (two digits divisor)
2. Eknunenpurven method (two digits divisor)

**Unit-III: LCM and HCF**

**Unit-IV: Power and Root**

Power: (i) Square (two digit numbers), (ii) Cube (two digit numbers).

Root: (i) Square root (four digit number) (ii) Cube root (six digit numbers)

**Unit-V: Contribution of Indian Mathematicians (In light of Arithmetic)**

1. Aryabhata
2. Brahmagupta
3. Mahaveeracharya
4. Bharti Krishna Tirtha

**Recommended Books:**

1. Vedic Mathematics, Motilal Banarsi Das, New Delhi.
2. Vedic Ganita: Vihangama Drishti-1, Siksha Sanskriti Uthana Nyasa, New Delhi.
3. Vedic Ganita Praneta, Siksha Sanskriti Uthana Nyasa, New Delhi.
4. Vedic Mathematics: Past, Present and Future, Siksha Sanskriti Uthana Nyasa, New Delhi.
5. Leelavati, Chokhambha Vidya Bhavan, Varanasi.
6. Bharatiya Mathematicians, Sharda Sanskrit Sansthan, Varanasi.

*D. Shukla*  
12/12/23  
अध्यक्ष / Chairman  
बोर्ड ऑफ स्टडीज (सी. ओ. एस.)  
Board of Studies (BOS)  
गणित एवं सांख्यिकी विभाग  
Department of Mathematics and Statistics  
डॉ. हरीसिंह गौर विश्वविद्यालय, सागर म.प्र.  
Dr. H.S. Gour Vishwavidyalaya, Sagar, M.P.

*D. Shukla*  
12/12/23

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12/12/23

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12/12/23

DOCTOR HARISINGH GOUR VISHWAVIDYALAYA, SAGAR  
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Department of Mathematics and Statistics

| VDM-OE-102 | Vedic Algebra | L                | T | P | C |
|------------|---------------|------------------|---|---|---|
|            |               | 2                | 0 | 0 | 2 |
|            |               | Max. Marks : 100 |   |   |   |

Mid Sem-20  
Internal assessment-20  
End Sem-60

**Unit-I: Multiplication (Quadratic expressions of single variable)**

1. Urdhvatiragbhyam Method
2. Combined Operations

**Unit-II: Division and Factorization**

1. Division (Divisor: Linear expression of single variable)
2. Factorization (Quadratic expression of single variable)

**Unit-III: LCM and HCF**

**Unit-IV: Solution of linear simultaneous equations**

**Unit-V: Contribution of Indian Mathematicians (In light of Algebra)**

1. Varahmihir
2. Bhaskaracharya
3. Neelkanth Somayya
4. Bharti Krishna Tirtha

**Recommended Books:**

1. Vedic Mathematics, Motilal Banarsi Das, New Delhi.
2. Vedic Ganita: Vihangama Drishti-1, Siksha Sanskriti Uthana Nyasa, New Delhi.
3. Vedic Ganita Praneta, Siksha Sanskriti Uthana Nyasa, New Delhi.
4. Vedic Mathematics: Past, Present and Future, Siksha Sanskriti Uthana Nyasa, New Delhi.
5. Beejganitam, Chokhambha Vidya Bhavan, Varanasi.
6. Bharatiya Mathematicians, Sharda Sanskrit Sansthan, Varanasi.

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**DOCTOR HARISINGH GOUR VISHWAVIDYALAYA, SAGAR**  
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| VDM-OE-103 | Vedic Geometry | L                | T | P | C |
|------------|----------------|------------------|---|---|---|
|            |                | 2                | 0 | 0 | 2 |
|            |                | Max. Marks : 100 |   |   |   |

Mid Sem-20  
Internal assessment-20  
End Sem-60

**Unit-I: Concept of Bhaudhayana Number (BN)**

1. BN of an angle
2. Multiplication of a constant in a BN
3. BN of complementary angles
4. BN of sum and difference ( $\alpha \pm \beta$ ) of an angle.
5. BN of half angle

**Unit-II: Trigonometry**

1. Definitions of trigonometric ratios
2. Trigonometric Identities

**Unit-III: Co-ordinate Geometry**

Different forms of straight lines.

**Unit-IV: Complex Numbers**

Multiplication, Division and Square root.

**Unit-V: Contribution of Bharatiya Mathematicians (In the light of Geometry)**

1. Bhaskaracharya
2. Madhavan
3. Parmeshvaran
4. Bharti Krishna Tirth
5. Baudhayana

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2. Vedic Ganita: Vihangama Drishti-1, Siksha Sanskriti Uthana Nyasa, New Delhi.
3. Vedic Ganita Praneta, Siksha Sanskriti Uthana Nyasa, New Delhi.
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Chairman 12/12/23  
Board of Studies (BOS)  
Department of Mathematics and Statistics  
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**Department of Mathematics and Statistics**

|            |                                |                  |   |   |   |
|------------|--------------------------------|------------------|---|---|---|
| VDM-OE-104 | Assignment & Presentation Work | L                | T | P | C |
|            |                                | 0                | 0 | 2 | 2 |
|            |                                | Max. Marks : 100 |   |   |   |

Mid Sem-20  
Internal assessment-20  
End Sem-60

1. Original Manuscript on any one of the following subjects:

- (i) Vedic Mathematics
- (ii) Contribution of Indian Mathematicians
- (iii) Ancient Bharatiya Mathematical Work (Leelavati, Sulba Sutra, Ganita Kaumudi etc. or any other Ancient Indian Text)

The manuscript may be a review article based upon personal observations or research article giving some new idea.

2. Candidates may deliver lecture in any educational institute (School or College) on Vedic Mathematics and feedback from head of the institute may be submitted to the University. Feedback must be on letter head of the institute duly signed and stamped.

12.12.23

D Sharma  
12/12/23

अध्यक्ष / Chairman  
बोर्ड ऑफ स्टडीज (डी. ओ. एस.)  
Board of Studies (BOS)  
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**Member of School Board of Mathematical and Physical Sciences**  
**On 13-12-2023**

( For Department of Mathematics & Statistics )

*AP*  
*13.12.23*  
**Prof. A.K. Saxena**  
 External Member  
 Deptt. of Mathematics  
 Maharaja Chhatrasal Univ.,  
 Chhatarpur- MP

*online consented*  
**Prof. Narendra Pandey**  
 External Member  
 Deptt. of Physics,  
 University of Lucknow,  
 Lucknow - UP

*online consented*  
**Prof. Kavishanker Varshney**  
 External Member  
 Deptt. of Physics  
 D.S College, Aligrah

*DS Shukla*  
*13/12/23*  
**Prof. Diwakar Shukla**  
 Deptt. of Mathematics & Statistics

*12/12/23*  
**Prof. R.K. Gangele,**  
 Deptt. of Mathematics & Statistics

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**Prof. Ranveer Kumar**  
 Deptt. of Physics

**Prof. U.K. Patil**  
 Deptt. of Pharmaceutical Science

**Prof. R.K. Rawat**  
 Deptt. of Math. & Statistics

*13.12.23*  
**Dr. Mahesh Kumar Yadav**  
 Deptt. of Math. & Statistics

*13/12/23*  
**Prof. Ashish Verma**  
 Head, Deptt. of Physics

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**Prof. Ashish Verma**  
 Head, Deptt. of Computer Sc. & Appl.

**Dr. Maheswar Panda**  
 Deptt. of Physics

**Mr. Kamal kant Ahirwar**  
 Deptt. of Computer Sc. & Applications

*13/12/23*  
**Prof. Ashish Verma**  
 Dean & Chairman, School Board of SMPS