17841

BRAINWARE UNIVERSITY

Term End Examination 2025-2026
Programme – BCA-Hons-2023/B.Sc.(ANCS)-Hons-2023/BCA-Hons-2024/B.Sc.(ANCS)-Hons-2024/BCA(MAWT)-Hons-2024
Course Name – Vedic Mathematics
Course Code - BCA30001/BNC30001/BMT30001
(Semester III)

Full Marks : 60 **Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A
(Multiple Choice Type Question) 1 x 15=15

1. *Choose the correct alternative from the following :*

(i) The sutra "Nikhilam Navatashcaramam Dashatah" is best used for-identify the correct option.

a) Division by 9
b) Multiplication of numbers close to a power of 10
c) Subtraction of large numbers
d) Addition of numbers

(ii) "Urdhva-Tiryagbhyam" translates to--- illustrate the true meaning.

a) By one more than the previous one
b) All from 9 and the last from 10
c) Vertically and crosswise
d) Transpose and apply

(iii) The method "Urdhva-Tiryagbhyam" is particularly useful for--- indicate more accurate option.

a) Division of large numbers
b) Multiplication of large numbers
c) Finding square roots
d) Solving algebraic equations

(iv) "Gunitasamuccayah" translates to--- interpret the true meaning.

a) The product of the sum of coefficients in the factors
b) By one less than the previous one
c) The ultimate and twice the penultimate
d) Part and whole

(v) The sutra "Gunakasamuccayah" is used for---classify the accurate option.

a) to find the roots of quadratic equation
b) Solving quadratic equations
c) Division of complex numbers
d) Finding the cube of a number

(vi) For squaring a number like 25, "one more than the previous one" applying the respective digit becomes…define the correct option.

a) 5
b) 3
c) 6
d) None of these

(vii) The *Ekanyunena Purvena* sutra can also be applied to simplify the multiplication --- explain the correct option.

a) Any two even numbers
b) Any two odd numbers
c) A number ending in 9 and a number ending in 0
d) Numbers close to a base like 100, 200, etc., but less than the base

(viii) Using the *Ekanyunena Purvena* sutra, establishh the result of 1999×1999.

a) 3996001
b) 4000000
c) 3992004
d) None of these

(ix) Identify the third step when multiplying two 2-digit numbers using the Urdhva-Tiryagbhyam method.

a) Adding the crosswise products of the tens and units digits
b) Multiplying the units digits of both numbers
c) Subtracting the products obtained in the previous steps
d) Multiplying the tens digits of both numbers

(x) Using the Urdhva-Tiryagbhyam method, examine the result of the multiplication of 12 and 34.

a) 348
b) 408
c) 612
d) None of these

(xi) In Vedic Mathematics, illustrate the term that represents the sum of the squares of each digit plus twice the product of the digits for squaring two-digit numbers.

a) Dwandwa Yoga
b) Ekadhikena Purvena
c) Nikhilam Navatashcaramam Dashatah
d) Vyashtisamastih

(xii) Select from the following that best describes the role of the "Ekadhika" (one more) number in the division process.

a) It determines the base for the calculation
b) It is the divisor itself
c) It is added to the next digit of the dividend during calculation
d) It is the remainder of the division

(xiii) Identify the cube of 12 using Vedic Maths shortcut techniques.

a) 1728
b) 1448
c) 1368
d) 1216

(xiv) Using the identity $(a+b)^3 = a^3 + 3a^2b + 3ab^2 + b^3$, illustrate the cube of 11.

a) 1131
b) 1331
c) 1231
d) 1111

(xv) Interpret the value of the cube root of 1331.

a) 11
b) 13
c) 17
d) 21

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Discuss the application of the Vedic Sutra "Ekadhikena Purvena." (3)

3. Using Vedic addition idea calculate the value of 4000 + 3000 + 200 (3)

4. Apply the "Nikhilam" sutra to find the product of 98 and 97. (3)

5. Using Vedic Mathematics sutra, determine the square of the 88. (3)

6. Using Vedic Mathematics sutra, solve the square of the 9. (3)

OR

Solve the cube of 22 (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Using Vedic Mathematics idea illustrate the value of 67 + 48 (5)

8. Using Vedic multiply idea to define 39 × 84 (5)

9. Calculate the cube root of 1157625 (5)

10. Explain the use of the "Ekadhikena Purvena" Sutra in the context of division. (5)

11. Justify the significance of "Step-by-Step" methods in Vedic Mathematics for calculating square roots. (5)

12. Using Nikhilam Navatascaramam Dasatah, write the multiplication value of 1275 with 1004. (5)

OR

Construct the cube of 1001 (5)

****