



INSTITUTE OF MATHEMATICS EDUCATION

MATHS APTITUDE TEST – 2025 (Higher Primary Level)

Std. : VII and VIII

Question Paper

Date : 26.07.2025

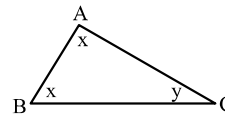
Time : 2 Hours

Total Marks : 100

Instructions : 1) Use separate answer sheet to mark answers. 2) First read question carefully, get the answer and darken the circle of respective correct alternative on answer sheet. 3) **No change is allowed, so think twice and then darken the appropriate circle.** 4) Note that half circle darkened or more than one circle darkened, cross or tick on the circle, will not be given marks. 5) If questions are not attempted, marks will not be given. 6) **You can use separate paper for rough work.**

- Q.1:** $(117.117) \div (0.117 \times 77) = ?$
A) 103 B) 130 C) 13 D) 31
- Q.2:** L.C.M of two co-prime numbers is always equal to the _____ of the given numbers
A) sum B) product C) factor D) difference
- Q.3:** Simplify: $(0.81)^{3/2} : 81$
A) 9:1000 B) 90:1000 C) 9:100 D) 0.9:100
- Q.4:** If $25 = x\%$ of 1000, then $x =$
A) 25 B) 5 C) 10 D) 2.5
- Q.5:** If an article is sold at 2.25 times of a cost price, then profit percentage is
A) 225 B) 75 C) 25 D) 125
- Q.6:** Population of a town increases at 12% per annum. If present population is 80,000 then population after two years is?
A) 100144 B) 100352 C) 101432 D) 103486
- Q.7:** The seven consecutive even natural numbers are a, b, c, d, e, f, g. What is their average?
A) d B) $(abcdefg) \div 7$ C) $g-4$ D) ab
- Q.8:** A train moves between two cities at a speed of 50 m/sec. It completes journey in 2.5 hours. The distance between two cities in km is
A) 360 B) 400 C) 450 D) 480
- Q.9:** 'A' takes 8 days and 'B' takes 12 days to do the same work. If they work together, then what part of a work is completed in 1 day?
A) $\frac{1}{4}$ B) $\frac{5}{24}$ C) $\frac{1}{6}$ D) $\frac{1}{8}$
- Q.10:** $2744 = x^3$. Then $x =$
A) 14 B) 16 C) 18 D) None of these
- Q.11:** $7^{36} + 2 \times 7^{36} + 4 \times 7^{36} = 7^x$, then $x =$
A) 35 B) 36 C) 37 D) 38
- Q.12:** $(a^3 + b^3) \div (a^2 - ab + b^2) = ?$ if $a = 0.75$, $b = 0.25$
A) -1 B) 0.5 C) -0.5 D) 1
- Q.13:** 'A' is older to C by 4 years and is younger to 'B' by 4 years. If sum of the ages of A, B, C is 42 years, then how old is A?
A) 16 B) 14 C) 18 D) 12
- Q.14:** Evaluate $(\sqrt[4]{x^3} - \sqrt[4]{y^3})(\sqrt[4]{x^3} + \sqrt[4]{y^3})$ where $x = 36$ and $y = 9$
A) 216 B) 81 C) 189 D) 64

Q.15:



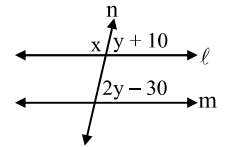
Refer figure. Angles x and y are as shown. If $4x - y = 120^\circ$, then $x + y =$

- A) 130° B) 100° C) 120° D) 140°

Q.16: If the sum of squares of length of 3 sides of right angled triangle is 800, then find the length of the hypotenuse.

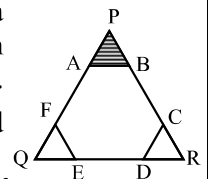
- A) 40 B) 60 C) 45 D) 20

Q.17: Refer Figure. Lines ℓ and m are parallel, and line n is transversal. Angles are as shown. Find $x-y$



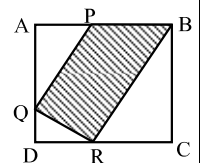
- A) 120° B) 80° C) 100° D) 90°

Q.18: Refer figure. ABCDEF is a regular hexagon inscribed in an equilateral $\triangle PQR$ as shown. $A(\triangle PQR) = 900\text{cm}^2$. Find area of shaded region.



- A) 100cm^2 B) 150cm^2
C) 75cm^2 D) 125cm^2

Q.19: Refer Figure. $\square ABCD$ is a square. $AB = 10\text{cm}$, $AP = 3\text{cm}$, $DQ = DR = 4\text{cm}$. Find area of shaded region.(in cm^2)



- A) 45 B) 53 C) 55 D) 63

Q.20: The ratio of measure of interior angle to exterior angle of a regular n sided polygon is 4:1. Then $n =$

- A) 8 B) 6 C) 5 D) 10

Q.21: Two circles with centers P and Q and radii r_1 and r_2 respectively intersect at points A and B. The $\square APBQ$ is of type ($r_1 \neq r_2$)

- A) rhombus B) square
C) rectangle D) kite

Q.22: Find the reciprocal of: $\left(\frac{1}{64}\right)^{-1/6}$

- A) 2 B) $1/2$ C) 4 D) $1/4$

Q.23: LCM of two prime numbers is 253. What is the difference between the numbers?

- A) 12 B) 13 C) 9 D) Can't determine

Q.24: If $3A = 5B$ and $3B = 4C$, then $A : C = ?$

- A) 3:4 B) 4:3 C) 20:9 D) 9:5

- Q.25:** What percent of 4 km is 1000 mm?
A) 0.25 B) 2.5 C) 0.025 D) 0.0025
- Q.26:** A shopkeeper suffered a loss of 10% which was equal to ₹ 100 while selling an article. What was the cost price of the article?
A) ₹900 B) ₹1000 C) ₹1100 D) ₹950
- Q.27:** The compound interest earned on Rs. 50,000 at 20% for 2 years is same as simple interest earned on Rs. 50,000 for 2 years at R% rate of interest. Find R.
A) 22% B) 25% C) 22.5% D) 27.5%
- Q.28:** Consider 7 numbers in ascending order having constant difference between any two consecutive numbers. The sum of all seven numbers is 77. Find the middle number.
A) 8 B) 9 C) 10 D) 11
- Q.29:** A and B start cycling from same point. A rides to south with a speed of 18 km/hr and B rides to west with a speed of 24 km/hr. Find the distance between them after 3 hrs.
A) 54km B) 72km C) 90km D) 63km
- Q.30:** It takes 11hrs to complete the work. What part of the work is completed in 4hrs 24min?
A) 2/5 B) 3/7 C) 1/2 D) 4/9
- Q.31:** Evaluate: $\sqrt{1728} \times 2\sqrt{3} =$
A) 12 B) 144 C) 324 D) 128
- Q.32:** If $1728 = m^2 \times n^3$, then $m + n =$, ($m, n \in \mathbb{N}$)
A) 13 B) 10 C) 12 D) 11
- Q.33:** If $(x + y)^2 = 6$ and $(x - y)^2 = 2$, then $4xy(x^2 + y^2) =$
A) 12 B) 16 C) 8 D) 20
- Q.34:** If $x + \frac{1}{x} = 2$, then $\left(x - \frac{1}{x}\right)^2 = ?$
A) 2 B) 3 C) -1 D) 0
- Q.35:** a, b, c are three numbers such that b is equal to 1.5 times of a and c is 2 times of a. If sum of the three numbers is 54, then $c - b =$.
A) 6 B) 8 C) 10 D) can't determine
- Q.36:** Refer figure.
Ray PS is parallel to ray RT.
Also, $PQ = PR$.
If $m\angle SPQ = 30^\circ$
and $m\angle TRU = 80^\circ$, then $m\angle WQR = ?$
A) 65° B) 110° C) 115° D) 120°
- Q.37:** Refer figure. $AD = BD$ and $AE = EC$, $m\angle BAC = 117^\circ$. Find $m\angle DAE$
A) 67° B) 54°
C) 63° D) 43°
- Q.38:** Find the distance between tower and a building of height 50m and 22m respectively if the distance between their tops is 53m.
A) 40m B) 42m C) 45m D) 48m

- Q.39:** The area of the triangle is equal to that of square of side 40cm. Find the length of the side of the triangle whose corresponding altitude is 64cm.
A) 50cm B) 48cm C) 32cm D) 40cm
- Q.40:** The area of the quadrilateral is 726 cm^2 . The lengths of perpendiculars drawn to diagonal from the opposite vertices are 20 cm and 24 cm. Find the length of this diagonal.
A) 36cm B) 35cm C) 34cm D) 33cm
- Q.41:** A cone has a height of 6cm and a base diameter of 7cm. How much ice cream the cone holds?
A) 30cm^3 B) 77cm^3 C) 34cm^3 D) 39cm^3
- Q.42:** The difference between the circumference and diameter of circle is 30cm. Find area (in cm^2 .)
A) 144 B) 136 C) 160 D) 154
- Q.43:** Which of the following is reciprocal of $(64)^{\frac{4}{6}} \times (128)^{\frac{-1}{7}}$?
A) 1/8 B) 8 C) 4 D) 1/4
- Q.44:** 'A' does a job in 14 days. 'B' is 40% more efficient than 'A'. How long will 'B' take to finish the same job working alone?
A) 8.4 days B) 12 days C) 10 days D) 9 days
- Q.45:** Find the larger of the two positive numbers such that the sum of the numbers is 30 and difference of their squares is equal to 4 times the sum of the numbers.
A) 15 B) 17 C) 21 D) 23
- Q.46:** The lines containing alternate sides of a regular polygon are at right angle to each other. Find the number of sides of polygon.
A) 8 B) 6 C) 5 D) 9
- Q.47:** Find perimeter of an equilateral triangle if its sides are at a distance of $3\sqrt{3}$, $6\sqrt{3}$ and $9\sqrt{3}$ from point P in the interior of the triangle.
A) 69 B) 99 C) 81 D) 108
- Q.48:** The natural numbers from 1 to 20 are listed below in such a way that the sum of any two adjacent numbers gives a prime number.
e.g. $16 + 15 = 31$
List : (20, A, 16, 15, 4, B, 12, C, 10, 7, 6, D, 2, 17, 14, 9, 8, 5, 18, E.) The number D is
A) 11 B) 1 C) 13 D) 19
- Q.49:** If the product of all divisors of 729 is written in the form $(3)^a$, then $a =$
A) 27 B) 9 C) 21 D) 18
- Q.50:** 'a' and 'b' are the smallest possible square natural numbers such that LCM of 'a' and 140 is 560 and the LCM of 'b' and 140 is 700. Find LCM of 'a' and 'b'.
A) 400 B) 1600 C) 2500 D) 4900