



INSTITUTE OF MATHEMATICS EDUCATION

MATHS APTITUDE TEST – 2026 (Higher Primary Level)

Std. : VII and VIII

Question Paper

Date : 01.08.2026

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: Find the reciprocal of $\left(\frac{1}{32}\right)^{\left(\frac{-1}{5}\right)}$
A) -2 B) 2 C) 0.5 D) 1.5

Q.2: L.C.M. of 0.125, 0.6, $0.\bar{6}$ is
A) 0.7 B) 0.5 C) 3 D) 6

Q.3: Find the ratio of 0.25 hours to 600 seconds
A) 10 : 3 B) 3 : 2 C) 3 : 4 D) 4 : 5

Q.4: What percentage is 25 grams of 1 kilo gram ?
A) 2.5 B) 5 C) 3 D) 4

Q.5: The cost price of an article is 75% of the marked price. Calculate the gain percent after allowing a discount of 10% on marked price .
A) 30% B) 25% C) 33.33% D) 20%

Q.6: Simple interest on a certain sum at a certain annual rate of interest for certain period is $(1/8)^{\text{th}}$ of the sum. The number representing rate of interest per annum is two times the number representing the period in years. The rate of interest is
A) 2% B) 5% C) 2.5% D) 3.5%

Q.7: Average of 11 consecutive positive integers is 28. Find the average of the first 5 numbers of these 11 numbers.
A) 26 B) 25 C) 27 D) Data insufficient

Q.8: Convert 100 m/s in km/hr.
A) 360 B) 320 C) 300 D) 345

Q.9: 'P' completes certain work in 10 days. 'Q' does the same work in double the number of days than P and 'R' is twice efficient as Q'. If they work together, then in how many days will they complete the work?
A) 10 B) 5 C) 4 D) 6

Q.10: If $361 \times 81 = 29241$, then $(3.61 \times 8100)^{(1/2)} =$
A) 1.2 B) 171 C) 120 D) 0.12

Q.11: Find the value $\{[0.000000512]^{(1/3)}\}^{(1/3)}$
A) 0.3 B) 0.25 C) 0.33 D) 0.2

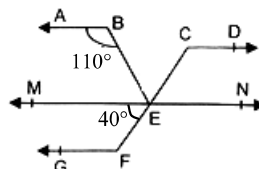
Q.12: The value of $\left(\frac{4}{25}\right)^{(3/2)}$ is
A) $\frac{8}{125}$ B) $\frac{4}{9}$ C) $\frac{9}{16}$ D) $\frac{16}{9}$

Q.13: $2\sqrt{x} + 6\sqrt{y} - \frac{1}{2}\sqrt{x} - \frac{2}{3}\sqrt{y} - \frac{1}{3}\sqrt{y} + \frac{7}{2}\sqrt{x} =$
A) $5\sqrt{x}$ B) $5(\sqrt{x} + \sqrt{y})$ C) $5\sqrt{y}$ D) None

Q.14: Simplify : $5\sqrt{x} + \frac{1}{x^{(-1/2)}}$
A) $2x$ B) $2\sqrt{x}$ C) $6\sqrt{x}$ D) None

Q.15: $\left(2a - \frac{1}{2a}\right)^3 =$
A) $\left(8a^3 - \frac{1}{8a^3}\right) - 3\left(2a - \frac{1}{2a}\right)$ B) $9\left(a^6 + \frac{1}{a^6}\right)$ C) 2 D) None

Q.16: $AB \parallel CD \parallel MN \parallel GF$.
 If $m\angle ABE = 110^\circ$
 and $m\angle MEF = 40^\circ$.
 Find $m\angle BEC$



A) 100° B) 50° C) 60° D) 70°

Q.17: In $\triangle ABC$, $AB = 6.5$ cm, $BC = 10$ cm. Then which of the following cannot be length of AC?
A) 13 cm B) 16.4 cm C) 4 cm D) 17 cm

Q.18: A ladder 29 m long kept resting on the wall and 20 m. away from the wall. How high will its top reach on the wall?
A) 22 m B) 21 m C) 23 m D) 25 m

Q.19: A rhombus has two diagonals of lengths $(x - 2)$ and $(x + 2)$. Find its area.

A) x^2 B) $x^2 + \frac{4x}{2}$ C) $-2 + \frac{x^2}{2}$ D) $x^2 - 4x$

Q.20: If 'r' is the radius, then the total surface area of solid hemisphere is given by
A) $3\pi r^2$ B) $2\pi r^2$ C) $4\pi r^2$ D) πr^2

Q.21: A circle with diameter 63 m is divided into 9 equal parts. Find the perimeter of one of the parts so obtained. (take $\pi = 22/7$)
A) 72 cm B) 64 cm C) 81 cm D) 85 cm

Q.22: Find measure of each exterior angle of 10-sided regular polygon.
A) 36° B) 100° C) 45° D) 30°

Q.23: Find HCF of $(x^3 + 8)$ and $x^2 + 4x + 4$
A) $x-2$ B) $x^2 + 1$ C) $x + 2$ D) $x^2 + 4$

Q.24: Find 4th proportional to 4.5, 5.4, 5.5
A) 6.8 B) 6.6 C) 0.66 D) 0.68

Q.25: If length of diagonal of the square is increased by 10%, then percentage in area is?
A) 10% B) 11% C) 21% D) Any other

- Q.26:** If a person sells two articles at same cost, such as on one he makes 15% profit and on the other he suffers 15 %, loss, then he makes
A) no loss, no profit B) 2.25% loss
C) 7.5% loss D) 7.5% profit
- Q.27:** A sum of money amounts to Rs. 12780 after 1 year and to Rs.13610.7 after 2 years on compound interest. Find the rate of interest.
A) 10% B) 11.4% C) 12.5% D) 6.5%
- Q.28:** The average of 7 numbers is 7. If each number is multiplied by 7 and then 7 is added to it, then what is a new sum of these 7 numbers?
A) 392 B) 343 C) 512 D) 700
- Q.29:** A train travels from A to B with an average speed of 120 km/hr. and it reaches its destination on time. If it goes with an average speed of 90 km/hr., it is late by 80 minutes. Find the distance between A and B in km.
A) 420 B) 480 C) 540 D) None of these
- Q.30:** Tap 'A' fills certain tank in half an hour. Tap 'B' fills it in 40 minutes and tap 'C' empties it in one hour. How long will it take to fill the tank if all taps are open together? (in minutes)
A) 36 B) 48 C) 30 D) 24
- Q.31:** If $5^a = 7^b = (35)^c = k$, then $\frac{1}{a} + \frac{1}{b} =$
A) (1/c) B) -1 C) 1 D) 0
- Q.32:** Which of the following is a factor of $4x^4 - 4$
A) (2x + 1) B) (2x^2 + 1) C) (2x^2 + 2) D) 16
- Q.33:** Mother is twice as old as her son Rohan today. After 16 years, she would be $(8/5)^{th}$ times of Rohan's age then. After further 8 years, how many times would mother's age be of Rohan's age at that time?
A) 2 B) 1.5 C) 2.5 D) 3
- Q.34:** If $x - 1 = \sqrt{2}$ and $y - 1 = -\sqrt{2}$, then $x^2 + y^2 = ?$
A) 6 B) 3 C) $4\sqrt{2}$ D) $4\sqrt{2}$
- Q.35:** Angles of a triangle are in the ratio 3:6:9, then find the measure of the smallest angle.
A) 20° B) 60° C) 45° D) 30°
- Q.36:** Area of triangle is 540 sq. cm. If ratio of lengths its sides is 8:15:17, then find the perimeter of the triangle.(in cm)
A) 225 B) 124 C) 120 D) 160
- Q.37:** Surface area of a cube is numerically equal to its volume. Find the length of side of cube.
A) 45 B) 12 C) 6 D) 5
- Q.38:** Diameter of wheel of a bicycle is 1.5 m. How much it will travel in 7000 revolutions? (in km) (take $\pi = 22/7$)
A) 16.5 B) 66 C) 99 D) 33
- Q.39:** The ratio of exterior angle to the interior angle of a regular polygon is 1:5. If the perimeter of

a polygon is 84 cm, then length of side of polygon =

- A) 7 cm B) 14 cm C) 21 cm D) 24 cm**

- Q.40:** The ratio of H.C.F to L.C.M. of two numbers is 1 : 12. If one of the numbers is 20, and the value of H.C.F. is 5, then find the other number.
A) 25 B) 15 C) 45 D) 75

- Q.41:** If $x^2 + \frac{4y^2}{9} = \frac{4}{3}xy$, then $y : x = ?$

- A) 2 : 3 B) 3 : 2 C) 3 : 1 D) 1 : 4**

- Q.42:** A man spends 25% of his income on house rent, 15 % on children's education and one fourth of the remaining on food. What percent of his income is left with him?
A) 40% B) 35% C) 55% D) 45%

- Q.43:** Solve the algebraic expression : $\frac{6x^2 - 5x - 6}{2x^2 - 3x}$

- A) $\frac{2}{x} + 3$ B) $\frac{x}{x-1}$ C) $\frac{2}{x} - 3$ D) $\frac{x}{x+1}$**

- Q.44:** The length and breadth of a rectangular sheet are in the ratio 4:3. If it is converted into hollow cylinder by joining opposite edges (breadths), then find the ratio of radius to height of the cylinder so formed.

- A) 4 : 3π B) $8\pi : 9$ C) 2:3 π D) 8:3**

- Q.45:** A circle has two equal chords XY and YZ of length 8cm and forming an angle of 90° at the circumference of the circle. Find the radius of the circle (in cm)

- A) 8 B) $4\sqrt{2}$ C) 16 D) insufficient data**

- Q.46:** For what value of x if $\sqrt{\left(\sqrt{\left(\sqrt{x} + 1\right)} + 1\right)} + 1 = 3?$
A) 4096 B) 64 C) 8 D) 3

- Q.47:** The simultaneous equations $x + \frac{1}{y} = 2$ and

$y + \frac{1}{x} = \frac{9}{4}$ have two pairs of real solutions.

What is the absolute difference between the possible values of x ?

- A) $\frac{1}{3}$ B) $\frac{2}{3}$ C) $\frac{3}{4}$ D) 1**

- Q.48:** The base of a triangle is increased by 20% and height decreased by 15%. Then its area

- A) decreases by 3% B) remains the same**
C) decreases by 2% D) increases by 2%

- Q.49:** Three circles with radii 2 cm, 3 cm and 3 cm touch each other such that each circle touches the other 2 circles externally. What is the area of the triangle formed by joining the centers of these circles. (in cm^2)

- A) 10 B) 12 C) 14 D) 16**

- Q.50:** p, q, r and s are two-digit primes which between them use all the non-zero digits except 5. What is the value of $p + q + r + s$?

- A) 220 B) 210 C) 200 D) 190**

