INSTITUTE OF MATHEMATICS EDUCATION

MATHS APTITUDE TEST – 2025 (Higher Primary Level)

Std. : VII and VIII **Question Paper** Date : 23.08.2025

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: If a and b are natural numbers such that $a + b = 2025$, then $(-1)^a \times (-1)^b =$

A) 2025 B) –2025 C) 1 D) –1

Q.2: Two numbers are in the ratio 5:6. Their H.C.F is 7. Find the sum of the two numbers.

A) 70 B) 77 C) 42 D) Can't determine

Q.3: Find the mean proportion between 1.6 and 3.6

A) 2.4 B) 0.24 C) 0.024 D) 24

Q.4: Express $2\frac{3}{4}$ in percentage form.

A) 2.75% B) 27.5% C) 275% D) 0.275%

Q.5: The cost price of the article is Rs. 22 and it was sold at loss of 22%. Find the actual loss in rupees.

A) 2.2 B) 4.84 C) 4.80 D) 2.45

Q.6: In how many years the sum invested at 10% simple interest will become 1.5 times of itself?

A) 5 yrs B) 10 yrs C) 7.5 yrs D) 8 yrs

Q.7: Find the average of first 33 multiple of 3.

A) 63 B) 54 C) 51 D) 36

Q.8: A car goes from city A to city B at a speed of 40 km per hour and it travels back the same distance at speed of 60 km per hour. Find the average speed of the entire trip in kmph.

A) 50 B) 45 C) 45.5 D) 48

Q.9: 25 workers finish the work in 4 days working together. How many days 10 workers will take to do the same work?

A) 12 B) 10 C) 16 D)15

Q.10: Find the smallest number with which 1260 must be multiplied so that the product is a perfect square.

A) 5 B) 7 C) 9 D) 35

Q.11 $(0.008)^{(1/3)} \times (64)^{(-1/6)} =$

A) 0.1 B) 1 C) 0.01 D) 0.2

Q.12: $\left(\sqrt{7} + \frac{1}{\sqrt{7}}\right)^2 + \left(\sqrt{7} - \frac{1}{\sqrt{7}}\right)^2 =$

A) $\frac{100}{\sqrt{7}}$ **B)** $10\sqrt{7}$ **C)** $\frac{100}{7}$ **D)** $\frac{10}{\sqrt{7}}$

Q.13: If $(81)^{x-2} = (\sqrt{3})^{4x}$, then x = ?

A) 6 B) 4 C) 8 D) 9

Q.14: $(199^2 - 1) \div (100 - 1) =$

A) 990 B) 400 C) 100 D) 600

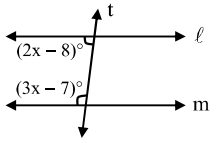
Q.15: The angles of the triangle are in the ratio 1:3:5. Find the difference between the greatest angle and the smallest angle.

A)40° B) 120° C) 60° D) 80°

Q.16: A ladder is 17ft long. The base of the ladder is 8ft away from the base of the vertical call. How far up the wall does the ladder reach?

A) 15ft B) 17ft C) 13ft D) 18ft

Q.17: Refer figure. Parallel lines ℓ and m are cut by a transversal t. The angles are as shown. Find the difference between these two angles.



A) 60° B) 90° C) 40° D) can't determine

Q.18: In an isosceles triangle ABC, if AB = AC = 26cm and BC = 20 cm, then find area of Δ ABC in cm^2

A) 180 B) 240 C) 220 D) 260

Q.19: How many bricks each measuring 25 cm × 11.25 cm × 6 cm will be needed to build a wall of 8 m × 6 m × 22.5 cm ?

A) 6400 B) 64000 C) 3200 D) 32000

Q.20: The length of the tangent segment from point A at a distance of 7.5 cm from the center of the circle is 6cm. Find the radius of the circle.

A) 4.8 cm B) 5 cm C) 5.4 cm D) 4.5 cm

Q.21: One angle of a pentagon is of measure 60° and all the remaining angles are of equal measure. Find the measure of each remaining angle.

A) 90° B) 120° C) 100° D) 80°

Q.22: $7^{17} + 7^{18} + 7^{19} + 7^{20}$ is completely divisible by

A) 400 B) 49 C) Both A, B D) None

Q.23: Three numbers are in a ratio 4:5:6. Their LCM is 420, Find their HCF

A) 7 B) 11 C) 13 D) Can't Determine

Q.24: a, b, c are in continued proportion. If $b^2 = 351$ and c = 13, then $\sqrt[3]{a} =$

A) 27 B) 9 C) $3\sqrt{3}$ **D) 3**

Q.25: $\sqrt{P}$ % of $\sqrt{P} = \frac{3}{4}$, then P =?

A) 60 B) 30 C) 45 D) 75

Q.26: $\frac{1}{3} \times 27^9 = ?$

A) 9^{13} **B)** 3^{27} **C)** 9^{12} **D)** 3^{30}

Q.27: The price of the article was reduced by 20%. And this reduced price was then increased by 25%. What is the net change in the price of the article?
A) Reduced by 5% **B) Increased by 5%**
C) No change **D) Can't say**

Q.28: The difference between the simple and the compound interest earned on ₹ 10,000 for a period of 2 years at rate of interest 8%
A) ₹ 66 **B) ₹ 64** **C) ₹ 62** **D) ₹ 68**

Q.29: The average age of A and B is 20years. The average age of A, B and C is 22 years. What is the age of C?
A) 26 yrs **B) 21 yrs** **C) 23 yrs** **D) 29 yrs**

Q.30: While going from place A to B, the car takes 4 hrs. It moves with an average speed of 80 kmph for first 3 hours of the journey. The speed of the car is reduced by 25% in last one hour of the journey. What is the distance between A and B?
A) 320 km **B) 310 km** **C) 300 km** **D)400 km**

Q.31: 'A' completes 25% of the work in one day and 'B' completes $(1/12)^{th}$ of the work in 1 day. If they work together, then how long will they take to do the same work?
A) 12 days **B) 3 days** **C) 9 days** **D) 8 days**

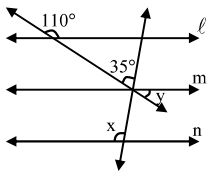
Q.32: Find square root of $65\frac{65}{64}$
A) $\sqrt{65\frac{1}{8}}$ **B)** $9\frac{1}{8}$ **C)** $\frac{65}{64}$ **D)** $8\frac{1}{8}$

Q.33: If difference between 'a' and 'b' is 5 (a > b & a, b ∈ N). Then $a^3 - 3ab(a-b) - b^3 = $.
A) 64 **B) 216** **C) 125** **D) Can't determine**

Q.34: The ratio of present ages of A to B is 6:5. After 12 years, the ratio of their ages become 9:8. What is the present age of A=?
A) 20 yrs **B) 24 yrs** **C) 22 yrs** **D) 23 yrs**

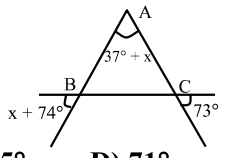
Q.35: $x^2 + \frac{1}{x^2} = 7$, then the value of $x^3 + \frac{1}{x^3}$ can be
A) 14 **B) 15** **C) 16** **D) 18**

Q.36: Refer figure. Lines ℓ, m, n are parallel to one another. Angles are as shown. Find measure of angle (x + y)



A) 175° B) 165° C) 170° D) 160°

Q.37: Refer figure. Angles are as shown. Find the measure of angle A.



A) 39° **B) 76°** **C) 35°** **D) 71°**

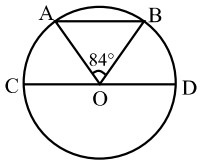
Q.38: How many integers from 1 to 100 have exactly 3 divisors?
A) 6 **B) 4** **C) 8** **D) 9**

Q.39: In an isosceles right angled triangle the area of triangle is 50 cm^2. Find the length of altitude to the hypotenuse in cm.
A) $5\sqrt{2}$ **B) 7** **C) 5** **D) 10**

Q.40: Find perimeter of a rhombus whose diagonals are of length 66cm and 112 cm.
A) 200cm **B)240 cm** **C) 250 cm** **D)260 cm**

Q.41: If the total surface area of a cube is 216 cm^2, then find its volume in cm^3.
A) 236 **B) 216** **C) 148** **D) 196**

Q.42: Refer figure. 'O' is the center of the circle. Chords AB and CD are parallel. If ∠AOB = 84°, then ∠AOC = .



A) 48° **B) 41°** **C) 47°** **D) 45°**

Q.43: The sum of all interior angles of a regular polygon is 1440°. Find the perimeter of polygon in cm if length of each side is 4cm.
A) 25 **B) 30** **C) 35** **D) 40**

Q.44: If the average of 16, 10 and n is between 18 and 21, then what is the greatest possible value of n? [n∈ N]
A) 34 **B) 32** **C) 36** **D) 29**

Q.45: We have 4 match sticks having lengths 1cm, 2cm, 3cm, 4cm. How many different triangles can be made choosing 3 sticks at a time?
A) 5 **B) 4** **C) 2** **D) 1**

Q.46: When I open a Maths book, there are two pages that face me. If the product of these numbers is 2756, then what is the sum of these numbers?
A) 105 **B) 270** **C) 108** **D) 263**

Q.47: The difference between L.C.M and G.C.D of two positive integers x and 50 is 825. Find value of x
A) 375 **B) 425** **C) 350** **D) 300**

Q.48: A predator beast weighs 2880 kg at the beginning of the year. During the first month of the year its weight increases by 33.33% and in the second month it decreases by 25%. In the third month it increases by 50% and in the fourth month it decreases by 33.33%. Find weight of the predator at the end of 4 months in kg.
A) 2600 **B) 2169** **C) 2880** **D) 2945**

Q.49: The HCF of two natural numbers is 33. The sum of the numbers is 528. The number of such pairs of natural numbers is?
A) 15 **B) 4** **C) 16** **D) 8**

Q.50: Rohan puts 12 plastic bags inside another plastic bag. Each of these 12 bags is either empty or contains 12 other plastic bags. All together if 12 bags are non-empty, Find the total number of bags.
A) 157 **B) 156** **C) 144** **D) 145**

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