Seat No.: | | | | | | | |

Vasishtha Model Test Paper - 2025

(18)(E)

Basic Maths Paper - 2

Shree Vasishtha Vidhyalaya - Vav — Piyush Sojitra

[Time: 3 Hour] — *[Marks: 80]*

- **Instructions:**
  1) Write in a clear legible handwriting.
  2) This question paper has four Sections A, B, C & D and Question Numbers from 1 to 54
  3) All Sections are compulsory. General options are given.
  4) The numbers to the right represent the marks of the question.
  5) Draw neat diagrams wherever necessary.
  6) New sections should be written in a new page. Write the answers in numerical order.
  7) Calculator and smart watch are not allowed.

SECTION -A

- **Answer the following questions as required(Que. 1 to 24) (1 mark each)** **(24)**
- **Choose the right option So that the statement become true (Que. No. 1 to 6)** **(06)**

1. If $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$ in a pair of two variable linear equations, its graphical form is _____
(A) Intersecting lines (B) Parallel lines (C) Coincident lines (D) None

2. If the roots of quadratic equation $ax^2 + bx + c = 0$, $a \neq 0$ are real and distinct then _____
(A) $b^2 - 4ac < 0$ (B) $b^2 - 4ac = 0$ (C) $b^2 - 4ac > 0$ (D) $b^2 - 4ac \neq 0$

3. For on AP the $(n-2)^{th}$ term is _____.
(A) $a + (n-1)d$ (B) $a + (n-3)d$ (C) $a + nd$ (D) not any one

4. If A(0,6) and B(0, -2) then the distance between A & B is _____.
(A) 6 (B) 4 (C) 8 (D) 2

5. $\sqrt{1 - \cos^2\theta} =$ _____
(A) $\sec^2\theta$ (B) $\sin^2\theta$ (C) $\sin\theta$ (D) 0

6. Relation between the measures of central tendency is $Z = 3M - 2\bar{x}$, then $\frac{M - \bar{X}}{Z - M} =$ _____.
(A) 0 (B $\frac{1}{2}$ (C) $-\frac{1}{2}$ (D) 2

- **Choose the correct answers from the answer given in brackets and write the following statement an true:** **(06)**

(Que. No. 7 to 12)

7. $3+\sqrt{16}$ is _____ a numbers [rational, irrational, negative integer]
8. α and β are Zeros of polynomial $ax^2+bx+c=0, a\neq 0$ then $\alpha.\beta$ = _____ [$\frac{c}{a}, \frac{-c}{a}, \frac{-b}{a}$]
9. Probability of a sure event is _____ [0, 1, 2]
10. $\frac{1-\tan^2 45^0}{1+\tan^2 45^0}$ = _____ . [0, 1, 2]
11. A line intersecting a circle in two points is called a _____ .[tangent , secant , chord]
12. For any information, $Z-M=6$ then $M-\overline{X}$= _____ . (2 , 3 , 12)

- **State whether the following statements are true or false (Que. No, 13 to 16)** **[04]**

13. HCF (5,15) = 10.
14. Number of the zeros of the polynomial $p(x)=5-x^2$ is 3
15. The graph of y=0 Shows the y-axis.
16. For any event A, P(A) is always greater than P(A')

- **Answer the following questions in one sentence, word or numbers (Que.No. 17 to 20)** **[04]**

17. Write common difference of AP $\frac{1}{p}, \frac{1-p}{p}, \frac{1-2p}{p}$, ...
18. In a cyclic quadrilateral PQRS $\angle P-\angle R=40^0$, then find $\angle R$.
19. Find the probability that a number chosen at random from the natural numbers 1 to 100 is prime.
20. For given data, $\Sigma x_i = 405$ & $\Sigma f_i = 27$ then find $\overline{X}$.

- **Match following : (Que. No. 21 to 24)** **[04]**

A	B
21. Volume of cylinder	(a) $\pi r^2 h$
22. Volume of cone	(b) $\frac{4}{3}\pi r^3$
	(c) $\frac{1}{3}\pi r^2 h$

A	B
23. Circumference ÷ diameter	(a) π
24. Area of circle ÷ Circumference of circle	(b) r
	(c) $\frac{r}{2}$