

SSLC SA-1 Practice Question Paper 2025-26

Subject: Mathematics

Time : 3Hours 15min

M.Marks:80

I. Choose the correct answers

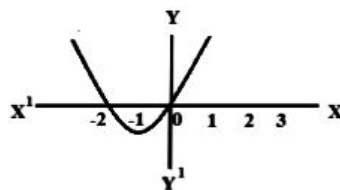
(8 x 1 = 8)

- HCF of two odd numbers is:
a) 0 b) 1 c) 2 d) 4
- The degree of a quadratic polynomial is:
a) 0 b) 1 c) 2 d) 3
- If lines drawn to the linear equations of type $a_1x+b_1y+c_1=0$, $a_2x+b_2y+c_2=0$ are coincident on each other, then the correct relation among the following is:
a) $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$ b) $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$ c) $\frac{a_1}{a_2} \neq \frac{c_1}{c_2}$ d) $\frac{a_1}{a_2} \neq \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$
- The discriminant of a quadratic equation $ax^2+bx+c=0$ is:
a) b^2+4ac b) c^2-4ab c) a^2-4ac d) b^2-4ac
- If 99,96,93,... are in AP, then the common difference is:
a) -3 b) 3 c) -6 d) 6
- In $\triangle ABC$, $DE \parallel BC$, if $AD = x$, $DB = x-2$, $AE = x+2$ and $EC = x-1$, then the value of x is:
a) 3 b) 4 c) 5 d) 6
- The coordinates of the origin are:
a) (1,1) b) (2,2) c) (3,3) d) (0,0)
- Similar figures among the following are:
a) A rectangle and a square b) Two trapeziums
c) Two equilateral triangles d) A square and a rhombus

II. Answer the following

(8 x 1 = 8)

- State the fundamental theorem of Arithmetic.
- From the given figure, find the zeroes of the polynomial.
- How many solutions does a pair of intersecting lines have?
- For what value of p are the roots of the equation $4x^2+px+3=0$ real and equal?
- If the n^{th} term of an AP is $5n-3$, find the 5th term.
- State the converse of the Basic proportionality theorem.
- Find the distance of the point (6, 8) from the x-axis.
- Find the midpoints of the coordinates (2, 3) and (4, 3).



III. Solve the following

(8 x 2 = 16)

- Prove that $\sqrt{5}-3$ is irrational.
- If α and β are zeroes of the polynomial x^2-3 , find the value of $\alpha^2+\beta^2-\alpha\beta$.
- Solve: $3x+y=12$ and $x+y=6$.
- Find the roots of the quadratic equation $12x^2-4\sqrt{15}x+5=0$.
- Find the sum of the first n terms of the AP $11+13+15,\dots$
- A street lamp bulb is fixed on a pole 6m above the level of the street. If a woman of height 1.5m casts a shadow of 3m, find how far she is away from the base of the pole.
- Find the distance between (3, -8) and (2, -2).

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24. Find the nature of roots of the equation $2x^2 - 4x + 3 = 0$.

IV. Solve the following

(9 x 3 = 27)

25. Find the LCM of HCF (306, 657) and 12 by prime factorization.

26. Find the zeroes of the quadratic polynomial $P(x) = x^2 - 8x - 20$ and verify the relationship between the zeroes and the coefficients.

27. The sum of the numerator and denominator of a given fraction is 12.

If 3 is added to its denominator,

then the fraction becomes $\frac{1}{2}$. Find the given fraction.

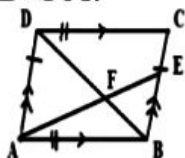
28. A motor boat whose speed in still water is 24 km/h takes 1 hour more to go 32 km upstream than to return downstream to the same spot. Find the speed of the stream.

29. The angles of a quadrilateral are in an arithmetic progression. If the sum of a pair of opposite angles is 130° , then find the angles of the quadrilateral.

30. Find the arithmetic progression whose third term is 16 and its 7th term exceeds the 5th term by 12.

31. The diagonal BD of parallelogram ABCD intersects AE at F as shown

in the figure. If E is any point on BC, then prove that $DF \times EF = FB \times FA$.



32. Find the ratio in which the point $P(x, 2)$ divides the join of $A(12, 5)$ and $B(4, -3)$.

33. Prove that $\sqrt{2}$ is irrational.

V. Solve the following

(4 x 4 = 16)

34. Solve graphically: $x + 2y = 6$ and $x + y = 5$.

35. Samreen takes 6 days less than Sangeetha to complete a piece of work. If both work together, they can complete the same in 4 days. In how many days will Sangeetha alone take to complete the work?

36. Check points $A(4, 3)$, $B(6, 4)$, $C(-5, -6)$ and $D(-3, 5)$ are the vertices of a parallelogram.

37. If two triangles are equiangular, prove that the triangles are similar.

VI. Solve the following

(1 x 5 = 5)

38. If the p^{th} , q^{th} and r^{th} terms of an AP be a , b and c respectively.

Then prove that $a(q-r) + b(r-p) + c(p-q) = 0$.
