



SHRI GULABRAO ESHWARA KHANDVE EDUCATIONAL FOUNDATION,
JAGADGURU INTERNATIONAL SCHOOL, LOHEGAON PUNE
TERM I EXAMINATION (2024-2025)

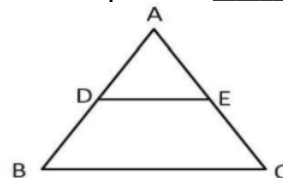
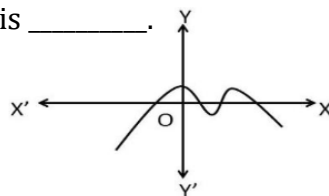
Class: IX
Date: 27/09/2024
Roll No. :

Subject: Mathematics (041)
M.M.: 80
Time: 3 Hrs

General Instructions

- (i) This Question paper has 5 Sections A-E. Section-A has 20 MCQ's carrying 1 mark each.
- (ii) Section-B has 5 questions carrying 2 marks each.
- (iii) Section-C has 6 questions carrying 3 marks each.
- (iv) Section-D has 4 questions carrying 5 marks each.
- (v) Section-E has 3 case based integrated units of assessment (4 marks each) with sub-parts of the values 1, 1 and 2 marks.
- (vi) All the Questions are compulsory. However, an internal choice in 2 Questions of 5 marks, 2 Questions of 3 marks and 2 Questions of 2 marks has been provided. An internal choice has been provided in the 2 marks Questions of Section E.
- (vii) Draw neat figures where required.

S.No	Section A	Marks
1.	If the HCF of two natural numbers are 15 and 180 and one of the numbers is 36, then the other number is _____. (a) 540 (b) 180 (c) 75 (d) 12	1
2.	The product of the HCF and the LCM of the smallest odd prime number and the smallest odd composite number is _____. (a) 27 (b) 45 (c) 60 (d) 18	1
3.	If one of the zeroes of the quadratic polynomial $y^2 + 3y + k$ is 2, then the value of k is _____. (a) 10 (b) -10 (c) 5 (d) -5	1
4.	The number of zeroes of p(x) represented by the given graph is _____. (a) one (b) two (c) three (d) four	1
5.	The system of linear equations $3x - 5y = -4$ and $18x - 30y = -24$ has _____. (a) a unique solution (b) infinitely many solutions (c) no solution (d) six solutions	1
6.	In the figure, if $DE \parallel BC$, $AD = 3$ cm, $BD = 4$ cm and $BC = 14$ cm, then DE equals to _____. (a) 10 cm (b) 8 cm (c) 6 cm (d) 4 cm	1
7.	A quadratic polynomial whose zeroes are 5 and -3 is _____. (a) $x^2 + 2x - 15$ (b) $x^2 - 2x - 15$ (c) $x^2 - 2x + 1$ (d) $x^2 + 2x + 15$	1
8.	The quadratic equation $x^2 - 30x + 225$ has ____ roots. (a) real (b) no real (c) real and equal (d) real and distinct	1



9.	If nine times the 9th term of an AP is equal to 11 times the 11th term, then its 20th term is _____. (a) 3 (b) 1 (c) 0 (d) 2	1
10.	The distance of the point (-3,4) from the origin is _____. (a) 7 units (b) 5 units (c) 11 units (d) $\sqrt{65}$ units	1
11.	The midpoint of segment PQ is R (0, 4). If the coordinates of Q are (-2, 3), then the coordinates of P are _____. (a) (-2,-5) (b) (2, 9) (c) (-2, 11) (d) (2, 5)	1
12.	Two APs have the same common difference. The first term of one of these is -1 and the other is -8. The difference between their fourth terms is _____. (a) 1 (b) -7 (c) 7 (d) 9	1
13.	The sum of the first 100 positive integers is _____. (a) 5050 (b) 1050 (c) 1275 (d) 1265	1
14.	If in two triangles ABC and DEF, $\frac{AB}{DE} = \frac{BC}{EF} = \frac{CA}{FD}$, then _____. (a) $\Delta FDE \sim \Delta ABC$ (b) $\Delta BCA \sim \Delta FDE$ (c) $\Delta FDE \sim \Delta CAB$ (d) $\Delta CBA \sim \Delta FDE$	1
15.	The pair of equations $y = 0$ and $y = -7$ has _____. (a) one solution (b) two solutions (c) infinitely many solutions (d) no solution	1
16.	If the distance of the point (3, 5) from the X axis is k units, then k equals____. (a) 3 (b) 4 (c) 5 (d) 8	1
17.	A quadratic polynomial one of whose zeroes is 5 and sum of the zeroes is 0, is _____. (a) $x^2 - 6x + 2$ (b) $x^2 - 36$ (c) $x^2 - 6$ (d) $x^2 - 25$	1
18.	The zeroes of the quadratic polynomial $x^2 + 99x + 125$ are _____. (a) both positive (b) both negative (c) one positive and one negative (d) both equal	1
<p style="text-align: center;">ASSERTION REASONING BASED QUESTIONS</p> <p>For the next two questions choose the correct one from the following options.</p> <p>(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation for assertion (A).</p> <p>(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation for assertion (A).</p> <p>(c) Assertion (A) is true but reason (R) is false. (d) Assertion (A) is false but reason (R) is true.</p>		
19.	Assertion (A): If the lines $3x + 2ky - 2 = 0$ and $2x + 5y + 1 = 0$ are parallel, then the value of k is $\frac{15}{4}$. Reason (R): The condition for parallel lines is $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$	1
20.	Assertion (A): The sum of the first 10 terms of the AP : -0.5, -1.0, -1.5, ... is 31. Reason (R) : The sum of n terms of an AP is given as $S_n = [2a + (n-1)d]$ where a is the first term and d is the common difference of the AP.	1

SECTION B

21.	Check whether can end 5^n with the digit 0 for any natural number n.	2
22.	Find the roots of the given quadratic equation using the quadratic formula. $-2x^2 + 2x + 12 = 0$ OR Find k if the lines $3x - 5y = 9$ and $2x + ky = 11$ are parallel.	2
23.	Find the 10th term from the end of the AP 5, 9, 13,, 185.	2
24.	ΔPQR is a triangle right angled at Q and $QS \perp PR$ Show that $PQ^2 = PS \times PR$.	2
25.	Find the ratio in which the line segment joining the points (2, 5) and (3, -2) is divided by the X-axis.	2



SECTION C

26.	Find the zeroes of the quadratic polynomial $x^2 - 2x - 8 = 0$ and verify the relationship between the coefficients	3
27.	Find the value of n for which the quadratic equation $(n-1) + 2(n-1)x + 1 = 0$ has equal roots.	3
28.	Prove that if a line is drawn parallel to one side of a triangle to intersect the other two sides in distinct points then the other two sides are divided in the same ratio. OR Prove that if a line divides any two sides of a triangle in the same ratio then the line is parallel to the third side.	3
29.	The sum of the denominator and the numerator of a fraction is 3 less than twice the denominator. If each of the numerator and the denominator is decreased by 1, the fraction becomes $\frac{1}{2}$. Find the fraction. OR Find two consecutive positive integers, the sum of whose squares is 365.	3
30.	Prove that $\sqrt{5}$ is an irrational number.	3
31.	Find a relation between x and y such that the point (x, y) is equidistant from the points (6, 2) and (2, 4).	3

SECTION D

32.	Find the coordinates of the points of trisection of the line segment joining the points (4, 0) and (-2, -3).	5
33.	In ΔABC , D and E are two points on side AB such that $AD = BE$. If $DP \parallel BC$ and $EQ \parallel AC$ then prove that $PQ \parallel AB$. OR If sides AB, BC and median AD of ΔABC are proportional to the corresponding sides PQ, QR and median PM of ΔPQR show that $\Delta ABC \sim \Delta PQR$.	5
34.	An aircraft covering 600 km, was slowed due to bad weather. The average speed for the trip was reduced by 200 km/hr and the duration of the flight was increased by 30 minutes. Find the original duration of the flight.	5
35.	A sum of ₹ 1600 is to be used to give 10 cash prizes to students of a school for their overall academic performance. If each cash prize is ₹ 20 less than its preceding prize, find the value of the first five prizes. OR If the sum of the first 4 terms of an AP is 40 and that of the first 14 terms is 280, find the sum of its first n terms.	5

SECTION E

36.	<p>Riya has designed a flower bed in front of her house. There are 45 plants in the first row, 43 in the second, 41 in the third and so on.</p>  <p>On the basis of this information answer the following questions.</p> <p>(i) If there are 11 rows in the flower bed, how many plants will the last row have? (1)</p> <p>(ii) What is the difference between the number of plants in the 7th row and the 13th row? (2)</p> <p style="text-align: center;">OR</p> <p>(ii) What is the sum of the number of plants in the 6th row and the 12th row? (2)</p> <p>(iii) If the flower bed has 10 rows find the total number of plants in the flower bed? (1)</p>	4
37.	<p>A classroom has been recreated on a Cartesian plane. Four friends Ravi, Vinod, Raghav and Vithal are shown as seated at points A (2, 3), B (7, 8), C (10, 5) and D (5, 0) respectively.</p> <p>Based on the above information, answer the following questions :</p> <p>(i) Find the distance between Ravi and Raghav. (1)</p> <p>(ii) Find the distance between Vinod and Vithal. (1)</p> <p>(iii) Show that quadrilateral ABCD is a rectangle. (2)</p> <p style="text-align: center;">OR</p> <p>(iii) Find the perimeter of quadrilateral ABCD. (2)</p>	4
38.	<p>The WONDERLAND amusement park charges ₹ 150 for a child and ₹ 400 for an adult. On Monday, 480 tickets were sold and the collection was ₹ 134500.</p>  <p>On the basis of the above information answer the following questions.</p> <p>(i) Let the number of children visited be x and the number of adults visited be y. Write the system of equations that models the situation. (1)</p> <p>(ii) How many children visited the park? How many adults visited the park? (2)</p> <p style="text-align: center;">OR</p> <p>(ii) One day the park had 750 visitors and the total amount collected was ₹ 215000. How many children and adults visited the park? (2)</p> <p>(iii) What is the total amount collected if 300 children and 350 adults visited the park? (1)</p>	4