CBSE EXAMINATION PAPER-2026

MATHEMATICS

(Solved)

Time allowed : 3 hours | Maximum Marks : 88

General Instructions :

Read the following instructions carefully and follow them :

i. This question paper contains **44 questions.** All questions are **compulsory.**

ii. This question paper is divided into **5 sections.**

iii. **Section A** – questions number **1 to 3** are case based questions

iv. **Section B** – questions number **4 to 23** are multiple choice questions

v. **Section C** – questions number **24 to 30** are very short answer

vi. **Section D** – questions number **31 to 38** are short answer

vii. **Section E** – questions number **39 to 44** are long answer

viii. There is no overall choice given in the question paper. However, an internal choice has been provided in few questions.

ix. Use of calculator is NOT allowed.

Section A

Question 1.

While playing badminton Ravi has set the barrier chain hung between two posts at the edge of the walkway of a street. It is hung in the shape of a parabola.

Based on the above information answer the following questions :

(1) Which type of the polynomial (linear, quadratic, cubic etc.) is graphically represented by a parabola ?

[1 Marks]

(2) If the polynomial represented by a parabola, intersects the x-axis at –2 and 3 and y-axis at –3, then write the zeroes of the parabola.

[1 Marks]

(3) Find the expression for the above polynomial.

[1 Marks]

(4) If the zeroes of the polynomial are –5 and 3, find its expression.

[1 Marks]

Question 2.

A friend of you wants to buy an electric car for which he plans to take a loan from a bank and plans to pay the total loan and the interest = ₹ 5,90,000, by paying every month starting with the first instalment of ₹ 5,000. He increases the instalment by ₹ 500 every month.

Based on the above, answer the following questions :

(1) What are the first three instalments paid by him ?

[1 Marks]

(2) Find the amount to be paid by him in 11th instalment.

[1 Marks]

(3) After paying the 31st instalment, find how much money he still has to pay.

[1 Marks]

(4) Find the number of instalments in which he would clear his total loan.

[1 Marks]

Question 3.

Raghav has a collection of balls of different colours. He has a total of 35 balls in his basket out of which seven are black in colour and eight are yellow in colour. Out of remaining balls, some are white and the rest are red.

Based on the above, answer the following questions :

(1) If the probability of drawing a red ball at random from the basket is three times that of a white ball, then find the number of red balls in the basket.

[2 Marks]

(2) Find the probability of drawing a ball at random from the basket which is either a black or a white ball.

[2 Marks]

Section B

Question 4.

At which of the following points, the quadratic polynomial $p(x) = – 3x + 18x^2 – 1$ intersects the positive x-axis ?

[1 Marks]

(A) (-1/6,0)

(B) (1/6,0)

(C) (1/3,0)

(D) (-1/3,0)

Question 5. The graph of a quadratic polynomial f(x) passes through (5,0), (0, –1) and (–2, 0). The two factors of the polynomial are

[1 Marks]

(A) (x – 1), (x + 2)

(B) (x + 2), (x – 5)

(C) (x + 5), (x – 2)

(D) (x + 1), (x – 5)

Question 6.

If pair of linear equations given by $a_1 x + b_1 y + c_1 = 0$ and $a_2 x + b_2 y + c_2 = 0$ has infinitely many solutions, then which of the following is definitely true ?

[1 Marks]

(A) $a_1/ a_2 \neq b_1 / b_2$

(B) $a_1 b_2 = a_2 b_1$

(C) $a_1 a_2 \neq b_1 b_2$

(D) $a_1/ a_2 = c_2/c_1$

Question 7.

The 31st term of the A.P. : –5/6.-3/4,-2/3,-7/12,....

[1 Marks]

(A) 12/20

(B) -5/3

(C) -12/20

(D) 5/3

Question 8.

Four tangents drawn to a circle are extended from both the sides to form a quadrilateral. Which of these quadrilateral is not possible ?

[1 Marks]

(A) Trapezium

(B) Square

(C) Rectangle

(D) Rhombus

Question 9.

ABCD is a trapezium in which AB||DC and E, F are points on AD and BC respectively such that EF||DC. If ED = 36 cm, BF = 70 cm and FC = 30 cm, then the length of AD is :

[1 Marks]

(A) 124 cm

(B) 114 cm

(C) 110 cm

(D) 120 cm

Question 10.

If $x \cdot \tan 45° \cdot \sin 30° = \cos 30° \cdot \cot 60°$ then x is equal to

[1 Marks]

(A) $1/\sqrt{3}$

(B) 1

(C) 1/2

(D) $\sqrt{3}$

Question 11. If the mean of first n natural numbers is 6n/ 11 then n is

[1 Marks]

(A) 11

(B) 22

(C) 6

(D) 12

Question 12.

If $\triangle DEF \sim \triangle PQR$ such that 3 DE = PQ and EF = 6 cm, then the length of QR is

[1 Marks]

(A) 2 cm

(B) 18 cm

(C) 12 cm

(D) 3 cm

Question 13.

If a, b, c and d are consecutive terms of an A.P., then c – b is equal to :

[1 Marks]

(A) d – c

(B) d – b

(C) d – a

(D) c – a

Question 14. From a point P, tangents PQ and PR are drawn to a circle with centre O and radius 6 cm. If OP = 10 cm, then area of quadrilateral PQOR is :

[1 Marks]

(A) 48 cm^2

(B) 96 cm^2

(C) 72 cm^2

(D) 24 cm^2

Question 15.

If in a $\triangle ABC$, AB = 6 cm and DE||BC such that AE = 1 /3 AC then the length of BD is

[1 Marks]

(A) 2 cm

(B) 5 cm

(C) 3 cm

(D) 4 cm

Question 16.

The perimeter of sector of a circle of radius 21 cm and central angle 60°, is

[1 Marks]

(A) 44 cm

(B) 22 cm

(C) 64 cm

(D) 273 cm

Question 17.

The number of conical bottles of radius 2 cm and height 1.2 cm that can be filled from a cylindrical bottle of radius 6 cm and height 8 cm, full of liquid, is

[1 Marks]

(A) 130

(B) 18

(C) 60

(D) 180

Question 18.

One ticket is drawn at random from a bag containing 50 tickets numbered 1 to 50. The probability that the drawn ticket has a number which is a multiple of 7 is :

[1 Marks]

(A) 1/5

(B) 7/50

(C) 4/25

(D) 3/25

Question 19.

Two dice are thrown simultaneously. The probability of getting a sum of 7 is :

[1 Marks]

(A) 2/9

(B) 5/36

(C) 1/6

(D) 1/9

Question 20.

If HCF of 66 and 99 is expressible in the form of 55m – 132, then the value of m is :

[1 Marks]

(A) 2

(B) 3

(C) 4

(D) 1

Question 21.

sin 2 θ= 2 sin θ is true, when θ is equal to

[1 Marks]

(A) 60°

(B) 45°

(C) 90°

(D) 0°

Question 22. Assertion (A) : In a circle of radius 21 cm, an arc of length 22 cm subtends an angle of 60° at the centre. Reason (R) : The length of arc of a sector of a circle of radius r and central angle θ is $2\pi r\theta/360$.

[1 Marks]

(A) Both, Assertion (A) and Reason (R) are true and Reason (R) is correct explanation of Assertion (A).

(B) Assertion (A) is true, but Reason (R) is false.

(C) Both, Assertion (A) and Reason (R) are true, but Reason (R) is not correct explanation for Assertion (A).

(D) Assertion (A) is false, but Reason (R) is true.

Question 23.

Assertion (A) : If the Mode and Mean of a data are 12 k and 15 k, then Median of the data is 14 k.
Reason (R) : The relation between the Mean, Mode and Median of a data is : Mean = 3 Median – 2 Mode.

[1 Marks]

(A) Both, Assertion (A) and Reason (R) are true and Reason (R) is correct explanation of Assertion (A).

(B) Both, Assertion (A) and Reason (R) are true, but Reason (R) is not correct explanation for Assertion (A).

(C) Assertion (A) is false, but Reason (R) is true.

(D) Assertion (A) is true, but Reason (R) is false.

Section C

Question 24.

Two numbers are in the ratio 3 : 5 and their LCM is 180. Find the HCF of these two numbers.

[2 Marks]

Question 25.

Find the quadratic polynomial the sum of whose zeroes is 1 and their product is −12. Hence find the zeroes of the polynomial.

[2 Marks]

Question 26.

A circle is inscribed in a right triangle ABC, right angled at B. If the lengths of the two sides containing the right angle are 8 cm and 15 cm, find the radius of the circle.

[2 Marks]

Question 27.

If 4 tan A= 3, then find the value of $\text{cosec}^2A+1./\text{cosec}^2A-1$.

[2 Marks]

Question 28.

If $7\sin^2A+3\cos^2A=4$, then find the value of tan A

[2 Marks]

Question 29.

A chord AB of a circle of radius 14 cm makes a right angle at the centre of the circle. Find the area of the minor segment.

[2 Marks]

Question 30.

An arc of length 22 cm subtends an angle of 60° at the centre of the circle. Find the area of the sector of the circle made by the arc.

[2 Marks]

Section D

Question 31.

Prove that $(2+3\sqrt{5})/7$ is an irrational number, given that $\sqrt{5}$ is an irrational number.

[3 Marks]

Question 32.

Find the coordinates of the points of trisection of the line segment joining the points P(5, –4) and Q(–4, 2).

[3 Marks]

Question 33.

Find the ratio in which the point P (6, k) divides the line segment joining the points M (4, 2) and N (8, –4). Hence find the value of k.

[3 Marks]

Question 34.

Find the ratio in which the point P (6, k) divides the line segment joining the points M (4, 2) and N (8, –4). Hence find the value of k.

[3 Marks]

Question 35.

Prove that the parallelogram circumscribing a circle is a rhombus.

[3 Marks]

Question 36.

AB is a chord of length 24 cm of a circle of radius 15 cm. The tangents at A and B intersect at a point P. Find the length PA.

[3 Marks]

Question 37.

If cos A + sin A =√2 cos A, prove that cos A – sin A =√2 sin A.

[3 Marks]

Question 38.

Find the mean of the following distribution :

Class	30–40	40–50	50–60	60–70	70–80
Frequency	6	13	8	12	11

[3 Marks]

Section E

Question 39.

If a line is drawn parallel to one side of a triangle to intersect the other two sides in distinct points, then prove that the other two sides are divided in the same ratio.

[5 Marks]

Question 40.

The sum of numerator and denominator of a fraction is 4 less than twice the denominator. If each of the numerator and denominator is decreased by 1, the fraction becomes 1/ 3 Find the fraction.

[5 Marks]

Question 41.

Three consecutive positive integers are such that sum of square of the first and the product of the other two is 67, find the integers.

[5 Marks]

Question 42.

CD and GH are respectively the bisectors of ∠ACB and ∠EGF such that D and H lie on sides AB and FE of ΔABC and ΔEFG respectively.

If ΔABC ~ ΔFEG, then show that

(i) CD/GH = AC/FG and

(ii) ΔDCB ~ ΔHGE.

[5 Marks]

Question 43.

Two poles of equal heights are standing opposite to each other on either side of the road which is 90 m wide. From a point between them on the road, the angles of elevation of the top of the poles are 30° and 60° respectively. Find the height of the poles and the distances of the point from the poles (use **√3 = 1.732**.)

[5 Marks]

Question 44.

From a solid cylinder whose height is 2.8 cm and radius 2.1 cm, a conical cavity of the same height and same radius is hollowed out. Find the volume and the total surface area of the remaining solid.

[5 Marks]