CBSE Class 10 Mathematics - 03
Sample / Practice Paper - 2025-26
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Time allowed: 3 hours1 Maximum marks: 80

General Instructions:

1. This question paper consists of 39 questions in 5 sections.
2. All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.
3. Section A consists of 20 objective-type questions carrying 1 mark each.
4. Section B consists of 6 Very Short Answer questions carrying 2 marks each.Answers to these questions should be in the range of 30 to 50 words.
5. Section C consists of 7 Short Answer questions carrying 3 marks each. Answers to these questions should be in the range of 50 to 80 words.
6. Section D consists of 3 Long Answer questions carrying 5 marks each.Answers to these questions should be in the range of 80 to 120 words.
7. Section E consists of 3 source-based/case-based questions carrying 4 marks each with sub-parts.

Section A (1 × 20 = 20 Marks)

Q1. If p(x)=x2−7x+12p(x) = x^2 - 7x + 12, find the zeros of the polynomial.

Q2. The nth term of an AP is given by an=7+(n−1)3a_n = 7 + (n-1)3. Find the 10th term.

Q3. Solve for x: 3x−7=113x - 7 = 11.

Q4. If a card is drawn from a well-shuffled deck, what is the probability of getting a red king?

Q5. Write the coordinates of the centroid of the triangle with vertices (2, 3), (4, 7), (6, 1).

Q6. The HCF of two numbers is 12 and their product is 432. Find the LCM.

Q7. The 6th term of an AP is 7 and the 10th term is 15. Find the common difference.

Q8. Write the first term of the quadratic polynomial whose zeros are –2 and 3.

Q9. A card is drawn at random from a pack of 52 cards. Find the probability of getting a face card.

Q10. Evaluate tan45◦+sin230◦\tan 45^\circ + \sin^2 30^\circ.

Q11. If the distance between points (x, 0) and (0, 4) is 5, find the value of x.

Q12. Find the mode of the following data:

Class Interval	0–10	10–20	20–30	30–40	40–50
Frequency	5	8	10	7	5

Q13. The probability of getting a defective pen is 0.1. If 10 pens are selected at random, how many defective pens are expected?

Q14. Find the sum of the first 15 multiples of 8.

Q15. Find the coordinates of the point which divides the line segment joining (3, –2) and (9, 4) in the ratio 1:2.

Q16. If two tangents are drawn to a circle from an external point, then prove that they are equal.

Q17. The surface area of a sphere is 154 cm². Find its radius. (Use π=227\pi = \frac{22}{7}).

Q18. Find the mean of first 5 prime numbers.

Q19. The first and last terms of an AP are 5 and 45 respectively. If the common difference is 4, find the number of terms.

Q20. Find the roots of the equation: x2+5x+6=0x^2 + 5x + 6 = 0.

Section B (2 × 5 = 10 Marks)

Q21. A train travels 120 km at a uniform speed. If the speed had been 10 km/h more, it would have taken 30 minutes less. Find the speed of the train.

Q22. The following table shows the marks obtained by 100 students in an examination:

Marks	0–10	10–20	20–30	30–40	40–50	50–60
No. of Students	8	10	20	25	22	15

Find the mode of the marks obtained.

Q23. A solid metallic sphere of radius 7 cm is melted and recast into smaller spherical balls, each of radius 1 cm. Find the number of balls.

Q24. The following table shows the distribution of daily wages of workers:

Wages (Rs)	100–120	120–140	140–160	160–180	180–200
No. of Workers	5	15	20	25	15

Find the mean daily wages of workers.

Q25. A die is thrown once. Find the probability of getting:
(i) an even number, (ii) a number greater than 4.

Section C (3 × 6 = 18 Marks)

Q26. Draw the graph of the pair of linear equations:

- x + y = 6
- x – y = 2

Also find the coordinates of the point where the lines intersect.

Q27. The following distribution table shows the daily wages of 160 workers. Construct a cumulative frequency table and draw an ogive.

Daily Wages (Rs)	0–50	50–100	100–150	150–200	200–250	250–300
No. of Workers	10	14	36	42	28	30

Q28. From a group of 2 boys and 2 girls, a committee of 2 persons is selected at random. Find the probability that:
(i) committee consists of exactly 1 boy and 1 girl,
(ii) committee consists of at least 1 boy.

Q29. A card is drawn from a pack of 52 cards. Find the probability that the card drawn is:
(i) a red card,
(ii) not a king,
(iii) a spade or an ace.

Q30. Construct a pair of tangents to a circle of radius 4 cm which are inclined to each other at an angle of 60°.

Q31. A metallic right circular cone of base radius 7 cm and height 24 cm is melted and recast into small spherical balls, each of radius 1 cm. Find the number of spherical balls.

Section D (5 × 4 = 20 Marks)

Q32. Solve the following pair of equations using elimination method:
3x+2y=11,2x–3y=–43x + 2y = 11, \\ 2x – 3y = –4.

Q33. A motorboat, whose speed is 18 km/h in still water, takes 1 hour more to go 24 km upstream than to return downstream to the same spot. Find the speed of the stream.

Q34. A wooden article was made by scooping out a hemisphere from each end of a solid cylinder. If the height of the cylinder is 10 cm and its base radius is 3.5 cm, find the volume of the article.

Q35. A well-shaped dugout in the form of a cylinder is 14 m in diameter and 3 m deep. Earth taken out of it is spread evenly to form a platform 22 m by 14 m. Find the height of the platform.

Section E (Case-based / Competency-based Questions: 3 × 4 = 12 Marks)

Q36. *(Statistics – Case Study)*
The marks obtained by 100 students in a mathematics test are given below:

Marks	0–10	10–20	20–30	30–40	40–50	50–60
No. of Students	5	9	16	30	25	15

Answer the following:
(a) Construct a cumulative frequency table.
(b) Draw a less than ogive.
(c) Find the median of the data.
(d) Find the class interval in which the median lies.

Q37. *(Trigonometry – Application)*
From a point on the ground, the angle of elevation of the top of a 10 m high building is 30°. A flagstaff is

fixed on the top of the building. The angle of elevation of the top of the flagstaff from the same point is 45°. Find the length of the flagstaff.

(Use 3=1.732\sqrt{3} = 1.732)

Q38. *(Probability – Real-life Case)*

A box contains 3 red, 5 black, and 7 white balls. A ball is drawn at random.

(a) What is the probability of drawing a red ball?

(b) What is the probability of drawing a black ball?

(c) What is the probability of drawing a white ball?

(d) If two balls are drawn at random without replacement, what is the probability that both are red?