Sample Paper
Subject – Mathematics (Basic)
Class – X

Instructions:

1. This question paper contains two parts A and B.
2. Both Part A and Part B have internal choices.

Part – A

1. It Consists two sections – Section I and Section II.
2. Section I has 16 questions of 1 mark each. Internal choice is provided in 5 questions.
3. Section II has 4 questions on case study. Each case study has 5 case-based sub-parts. An examinee is to attempt any 4 out of 5 sub-parts.

Part B

1. Question No. 21 to 26 are Very Short Answer Type of questions of 2 marks each.
2. Question No. 27 to 33 are Short Answer Type questions of 3 marks each.
3. Question No. 34 to 36 are Long Answer Type questions of 5 marks each.
4. Internal choice is provided in 2 questions of 2 marks, 2 questions of 3 marks and 1 question of 5 marks.

Part – A

Section-I

Section I has 16 questions of 1 mark each. Internal choice is provided in 5 questions.

Q. 1. If the HCF of 20 and 35 is 5, LCM of 20 and 35 is $70 \times \boldsymbol{a}$, then find the value of $\boldsymbol{a}$. **[1]**

Q. 2. If α and β are zeroes of polynomials $p(x) = x^2 + x + 1$, then find the value of $\alpha + \beta$. **[1]**

Q. 3. If the lines given by $4x + ky = 1$ and $6x - 10y = 14$ have unique solution, then find the value of k. **[1]**

Q. 4. If one root of the equation $x^2 - 6x + 2p = 0$ is 2, then what is the value of p? **[1]**

Q. 5. Find the sum of first 10 odd natural numbers. **[1]**

OR

Find the sum of all the natural numbers from 1 to 100.

Q. 6. What is the distance between the points $O(0,0)$ and $P(3,4)$? **[1]**

Q. 7. If the two tangents inclined at an angle of 60° are drawn to a circle of radius 3 cm, then what is the length of each tangent? **[1]**

Q. 8. A tangent PQ at a point P of a circle of radius 6 cm meets a line through the centre O at a point Q, so that OQ = 10 cm. Find the length of PQ. **[1]**

Q. 9. If $\sqrt{3}\ \sin x = \cos x$, then find the value of x. **[1]**

Q. 10. If $3\tan\theta = 4$ then find $\frac{3\sin\theta + 2\cos\theta}{3\sin\theta - 2\cos\theta}$. **[1]**

OR

Evaluate $\tan 30° \operatorname{cosec} 60° + \tan 60° \sec 30°$

Q. 11. A sector is cut from a circle of diameter 21 cm. If the angle of the sector is 150°, then find its area. **[1]**

OR

If the perimeter of a semi-circular protractor is 72 cm, then find its radius.

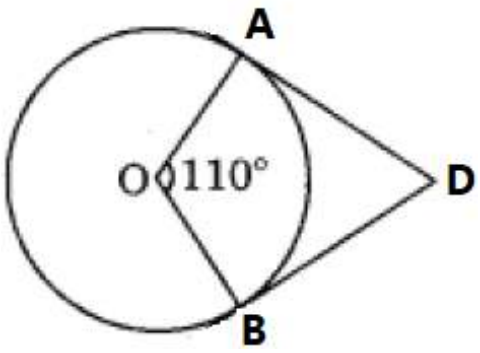
Q. 12. What is the maximum radius of sphere that can be carved out of a cube of edge 12 cm? **[1]**

Q. 13. What is the probability of throwing a sum 11 with two dice? **[1]**

OR

Find the probability that an ordinary year has 53 Monday.

Q. 14. If DA and DB are two tangents to a circle with centre O such that $\angle AOB = 110°$, then find $\angle ADB$. **[1]**



Q. 15. Find the value of k for which the quadratic equation $kx(x-3)+9=0$ has equal real roots. **[1]**

Q. 16. What is the 15th term of the sequence defined by $t_n = \frac{1}{2n+1}$? **[1]**

OR

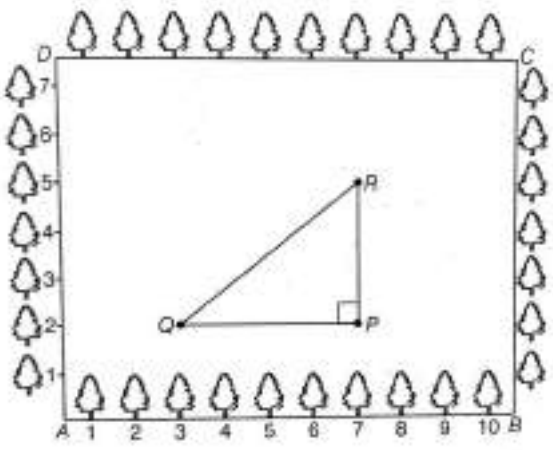
How many terms are there in the following AP ?

$20, 25, 30, \ldots, 100.$

Section – II

Case study-based questions are compulsory. Attempt any four sub parts of each question. Each subpart carries 1 mark.

Q. 17. The class X students of a secondary school in Krishinagar have been allotted a rectangular plot of land for this gardening activity. Saplings of Gulmohor are planted on the boundary at a distance of 1 m from each other. There is a triangular grassy lawn in the plot as shown in the figure.



The students are to sow seeds of flowering plants on the remaining area of the plot. Then, taking A as origin, answer the following questions.

(a) What are the coordinates of A? **[1]**

(i) $(0, 0)$ (ii) $(2, 0)$ (iii) $(0, 3)$ (iv) $(-2, 0)$

(b) What are the coordinates of Q? **[1]**

(i) $(3, 1)$ (ii) $(7, 3)$ (iii) $(3, 2)$ (iv) $(5, 2)$

(c) What are the coordinates of R? **[1]**

(i) $(7, 5)$ (ii) $(5, 7)$ (iii) $(7, 0)$ (iv) $(0, 5)$

(d) Find the distance between Q and R. **[1]**

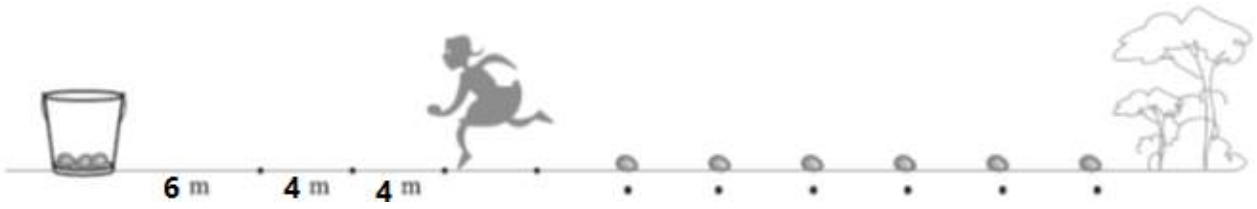
(i) 4 units (ii) 5 units (iii) 3 units (iv) 2 units

(e) Find the area ΔPQR. **[1]**

(i) 5 sq. units (ii) 3 sq. units (iii) 6 sq. units (iv) 4 sq. units

Q. 18. In a potato race, a bucket is placed at the starting point, which is 6 m from the first potato and the other potatoes are placed 4 m apart in a straight line. There are ten potatoes in lines.

A competitor starts from the bucket, picks up the nearest potato, runs back with it, drops it in the bucket runs back to pick up the next potato, runs to the bucket to drop it in and she continues in the same way until all the potatoes are in the bucket.



(a) What is the distance covered by competitor after placed the second potatoes in basket? **[1]**

(i) 15 m (ii) 20 m (iii) 25 m (iv) 28 m

(b) Find the common difference of AP that form in the potato race. **[1]**

(i) 8 (ii) 7 (iii) 10 (iv) 5

(c) Write the formula to find nth term of an AP. **[1]**

(i) $a + (n-1)d$ (ii) $a - (n-1)d$ (iii) $2a - (n-1)d$ (iv) $2a + (n-1)d$

(d) Write the formula to find sum of first n terms of an AP. **[1]**

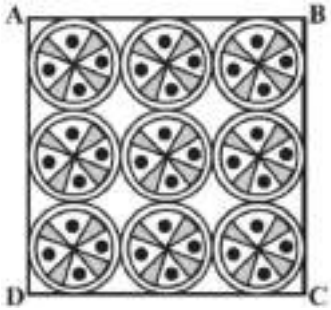
(i) $S = \frac{n}{2}[a + (n-1)d]$ (ii) $S = \frac{n}{2}[2a + (n-1)d]$

(iii) $S = \frac{n}{3}[a + (n-1)d]$ (iv) $S = \frac{n}{2}[2a + (n-1)d]$

(e) What is the total distance, which the competitor has to run? **[1]**

(i) 425 m (ii) 310 m (iii) 420 m (iv) 175 m

Q. 19. Mathematics teacher of Class X of secondary school had organized a colouring activity on a square handkerchief. Nine circular designs each of radius 14 cm are made see in the given figure.



Answer the following question below:

(a) Find the length of the side of square ABCD. **[1]**

(i) 28 cm (ii) 90 cm (iii) 84 cm (iv) 100 cm

(b) What is area ($in\ cm^2$) of each circle? **[1]**

(i) 616 (ii) 526 (iii) 713 (iv) 450

(c) find the diagonal of square ABCD. **[1]**

(i) 28 cm (ii) $14\sqrt{2}$ (iii) $12\sqrt{3}$ (iv) $14\sqrt{3}$

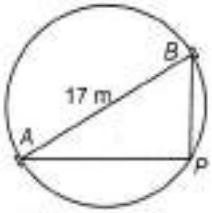
(d) Find area of the remaining portion of the handkerchief. **[1]**

(i) 1512 cm^2 (ii) 2020 cm^2 (iii) 1530 cm^2 (iv) 1738 cm^2

(e) If cost of colouring of circular designs is Rs. 12 per cm^2, then what is the total cost of 9 circular designs? **[1]**

(i) Rs. 52003 (ii) Rs. 62011 (iii) Rs. 49896 (iv) Rs. 51023

Q. 20. Mohit is a student of Class X. He has created a pole on the boundary of a circular park of diameter 17 m in such a way that the difference of its distances from two diametrically opposite fixed gates A and B on the boundary is 7 m.



Give answers to his questions by looking at the figure.

(a) Find a quadratic equation in variable x for above situation. **[1]**

(i) $x^2 + 7x - 120 = 0$ (ii) $x^2 + 5x - 100 = 0$

(iii) $x^2 + 5x - 60 = 0$ (iv) $x^2 + 40x - 50 = 0$

(b) Find the distance between pole and gate B. **[1]**

(i) 9 m (ii) 8 m (iii) 10 m (iv) 12 m

(c) Find the distance between pole and gate A. **[1]**

(i) 20 m (ii) 18 m (iii) 15 m (iv) 17 m

(d) What is length of $(AP + BP)$? **[1]**

(i) 20 m (ii) 22 m (iii) 23 m (iv) 25 m

(e) Find the area of ΔABP. **[1]**

(i) 50 m^2 (ii) 40 m^2 (iii) 92 m^2 (iv) 70 m^2

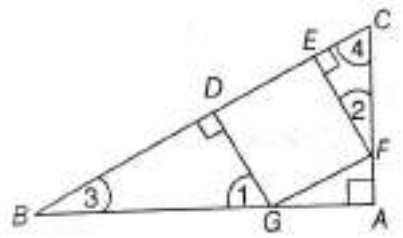
Part –B

All questions are compulsory. In case of internal choices, attempt any one from those options.

Q. 21. Find the LCM and HCF of 12, 15 and 21 by applying the prime factorisation method. **[2]**

Q. 22. Find the roots of the equation $9x^2 - 108 + 36x = 0$. **[2]**

Q. 23. In the given figure, if DEFG is a square and $\angle BAC = 90°$, then show that $DE^2 = BD \times EC$. **[2]**



OR

In an isosceles right-angled triangle, if the hypotenuse is $6\sqrt{2}$ cm, find the length of the sides of the triangle.

Q. 24. Prove that $\dfrac{\sin\theta - 2\sin^3\theta}{2\cos^3\theta - \cos\theta} = \tan\theta$ **[2]**

OR

Prove that $\cot A + \tan A = \sec A \operatorname{cosec} A$.

Q. 25. Compute the Arithmetic Mean for the following data: **[2]**

Marks obtained	Number of students
0 – 10	14
10 – 20	8
20 – 30	15
30 – 40	21
40 – 50	9
50 – 60	8

Q. 26. If α and β are the zeroes of the polynomial $p(x) = 5x^2 - 7x + 1$, then find the value of $\frac{1}{\alpha} + \frac{1}{\beta} = 0$. **[2]**

Q. 27. Prove that $\sqrt{n}$ is not a rational number, if n is not a perfect square. **[3]**

OR

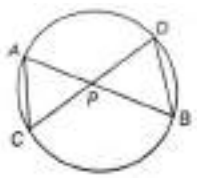
The length, breadth and height of a room are 8 m 25 cm, 6 m 75 cm and 4 m 50 cm respectively. Find the length of the longest rod that can measure the three dimensions of the room exactly.

Q. 28. Draw a circle of radius 2 cm. Take two points A and B on one of its extended diameter each at a distance of 5 cm from its centre. Draw tangent to the circle from these two points A and B. **[3]**

Q. 29. In the given figure, two chords AB and CD intersect each other at the point P. Prove that **[3]**

(i) $\Delta APC \sim \Delta DPB$.

(ii) $AP.PB = CP.DP$



Q. 30. Prove that **[3]**

$$\cot^2 A\left(\frac{\sec A-1}{1+\sin A}\right)+\sec^2 A\left(\frac{\sin A-1}{1+\sec A}\right)=0.$$

OR

Prove that

$$\sqrt{\frac{\operatorname{cosec} A-1}{\operatorname{cosec} A+1}}+\sqrt{\frac{\operatorname{cosec} A+1}{\operatorname{cosec} A-1}}=2\sec A.$$

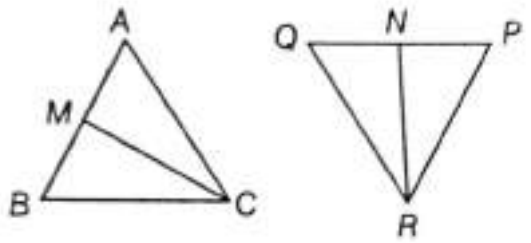
Q. 31. A circle with diameter 20 cm is drawn somewhere on a rectangular piece of paper with length 40 cm and width 30 cm. This paper is kept horizontal on table top and very small size of die, is dropped on the rectangular paper without seeing towards it. If the die falls and lands on the paper only, then find the probability that it will fall and land inside the circle. **[3]**

Q. 32. Solve the equations for x and y: $x+4y=27xy;\ \ x+2y=21xy$ **[3]**

Q. 33. In the following figure, CM and RN are respectively the medians of ΔABC and ΔPQR. If $\Delta ABC \sim \Delta PQR$, prove that **[3]**

(i) $\Delta AMC \sim \Delta PNR$

(ii) $\frac{CM}{RN}=\frac{AB}{PQ}$.



Q.34. An army pilot is flying an aeroplane at an altitude of 1800 m observes some suspicious activity of two ships which are sailing towards it in the same directions and immediately report it to the navy chief. The angles of depression of the ships as observed from the aeroplane are 60° and 30°, respectively. Find the distance between two ships. **[5]**

Q. 35. From a solid cylinder whose height is 2.8 cm and diameter is 1.8 cm, a conical cavity of the same height and same diameter is hollowed out. Find the total surface area of the remaining solid to the nearest cm^2. **[5]**

OR

Water in a canal, 6 m wide and 1.5 m deep is flowing with a speed of 10 km/h. How much area will it irrigate in 30 min, if 8 cm of standing water is needed?

Q. 36. Find the median for the following data: **[5]**

Class interval	**Frequency**
130 – 139	4
140 – 149	9
150 – 159	18
160 – 169	28
170 – 179	24
180 – 189	10
190 – 199	7

Sample Paper
Subject – Mathematics (Standard)
Class – X

Instructions:

1. This question paper contains two parts A and B.
2. Both Part A and Part B have internal choices.

Part – A

1. It Consists two sections – Section I and Section II.
2. Section I has 16 questions of 1 mark each. Internal choice is provided in 5 questions.
3. Section II has 4 questions on case study. Each case study has 5 case-based sub-parts. An examinee is to attempt any 4 out of 5 sub-parts.

Part B

1. Question No. 21 to 26 are Very Short Answer Type of questions of 2 marks each.
2. Question No. 27 to 33 are Short Answer Type questions of 3 marks each.
3. Question No. 34 to 36 are Long Answer Type questions of 5 marks each.
4. Internal choice is provided in 2 questions of 2 marks, 2 questions of 3 marks and 1 question of 5 marks.

Part – A

Section-I

Section I has 16 questions of 1 mark each. Internal choice is provided in 5 questions.

Q. 1. A, B and C start at the same time in the same direction to run around a circular stadium. A completes a round in 252 seconds, B in 308 seconds and C in 198 seconds, all starting at the same point. After what time will they meet again at the starting point? **[1]**

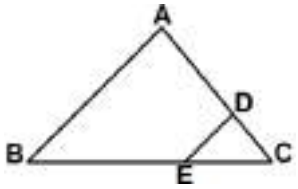
Q. 2. If one of the zeroes of a quadratic polynomial $(k-1)x^2 + kx + 1$ is -3, then find the value of k. **[1]**

OR

What is the sum of all the natural numbers from 1 to 100?

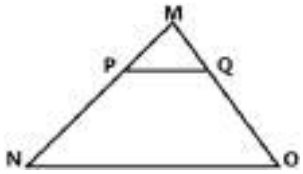
Q. 3. Find the point in which the pair of equations $4^{x+y} = 256$ and $256^{x-y} = 4$ will intersect. **[1]**

Q. 4. In the given figure, if $ED \parallel AB$, then prove that $1 + \frac{AD}{CD} = 1 + \frac{EB}{CE}$. **[1]**



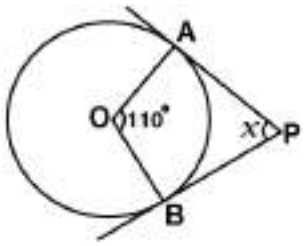
OR

In the given figure, $PQ \parallel NO$. If $\frac{MP}{PN} = \frac{4}{13}$ and QO = 15.6 cm, then find MQ.



Q. 5. If $3\tan\theta = 5$, then find $\frac{3\sin\theta - 5\cos\theta}{3\sin\theta + 5\cos\theta}$. **[1]**

Q. 6. In the given figure, find the angle x. **[1]**



Q. 7. Find the area swept by a minute hand of the clock of length 15 cm in 10 minutes. **[1]**

Q. 8. When two dice are thrown together, find the probability of getting a number always greater than 4 on the second die. **[1]**

Q. 9. If $\sec A = \frac{17}{8}$, then find the value of $\frac{3 - 4\sin^2 A}{4\cos^2 A - 3}$. **[1]**

OR

Evaluate the value of $\tan 30° + \sin 60° \sec 60°$.

Q. 10. If radius of circle is 3 cm and tangent is drawn from an external point to the circle is 4 cm, then find the distance from centre of circle to the external point. **[1]**

Q. 11. Three metallic solid cubes whose edges are 4 cm, 5 cm and 6 cm are melted and formed into a single cube. Find the edge of the formed cube. **[1]**

Q. 12. Two parallel tangents are drawn on a circle having radius 5 cm, find the distance between two tangents. **[1]**

Q. 13. What is the nature of roots of the quadratic equation $5y^2 - 4y + 3 = 0$. **[1]**

OR

If 2 is one of the roots of the equation $kx^2 + 2x - 3 = 0$, then find the value of k.

Q. 14. Find the probability of throwing a sum 9 with two dice. **[1]**

Q. 15. A wire is in the form of a circle of radius 28 cm. It is re-bent into a square form. Determine the length of the side of the square. **[1]**

Q. 16. Is -5 a solution of quadratic equation $3x^2 + 14 - 5 = 0$? **[1]**

OR

Find the non-zero value of k for which the quadratic equation $3x^2 - kx + k = 0$ has equal roots.

Section – II

Case study-based questions are compulsory. Attempt any four sub parts of each question. Each subpart carries 1 mark.

Q. 17. Case Study I

Efficiency of Machine

In the current scenario, government has policy to make a highway as soon as possible. So, the constructor used the heavy machine instead of using man labour.

A machine operator dug out a field in the shape of circular having 3 metres and some depth 10 metres.

(a) When the machine operator dug out the field in the given dimension, the three-dimensional shape of the digging area is **[1]**

(i) cylindrical (ii) conical (iii) cubical (iv) spherical

(b) find the volume of the soil. **[1]**

(i) 250 m^3 (ii) 280 m^3 (iii) 282.6 m^3 (iv) 290 m^3

(c) How much the cover area of the field dug out? **[1]**

(i) 27 m^2 (ii) 28.90 m^2 (iii) 28.26 m^2 (iv) 29.2 m^2

(d) Find the total inner surface area of the digging field. **[1]**

(i) 216.66 m^2 (ii) 212.66 m^2 (iii) 210.66 m^2 (iv) 214.66 m^2

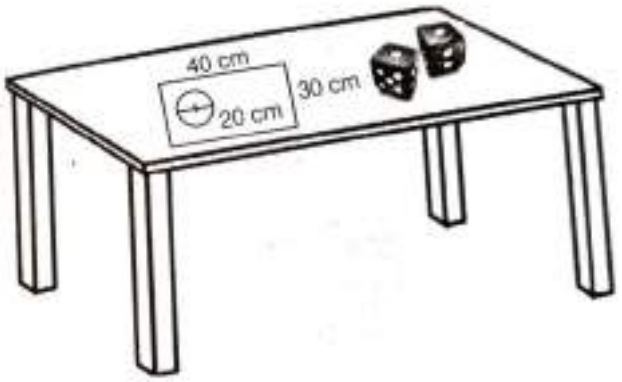
(e) If the cost of digging out of 1 cubic metre field is Rs. 50. Find the total cost of complete digging out field. **[1]**

(i) Rs. 1420 (ii) Rs. 1413 (iii) Rs. 1450 (iv) Rs. 1510

Q. 18. Case Study II

Probability of Space

A circle with diameter 20 cm is drawn somewhere on a rectangular piece of paper with length 40 cm and width 30 cm. This paper is kept horizontal on table top and very small size of die, is dropped on the rectangular paper without seeing towards it.



(a) Write the interval in which the probability of any event lies **[1]**

(i) $[0, 2]$ (ii) $[0, 1]$ (iii) $[-1, 1]$ (iv) None of these.

(b) What is the probability of any impossible event? **[1]**

(i) 0 (ii) 1 (iii) $\frac{1}{2}$ (iv) $\frac{1}{4}$

(c) In tossing of die, what is the probability of getting any number? **[1]**

(i) $\frac{1}{3}$ (ii) $\frac{1}{2}$ (iii) 1 (iv) $\frac{1}{4}$

(d) What is the probability of tossing die fails inside the circle? **[1]**

(i) $\frac{15}{42}$ (ii) $\frac{11}{42}$ (iii) $\frac{17}{42}$ (iv) $\frac{11}{40}$

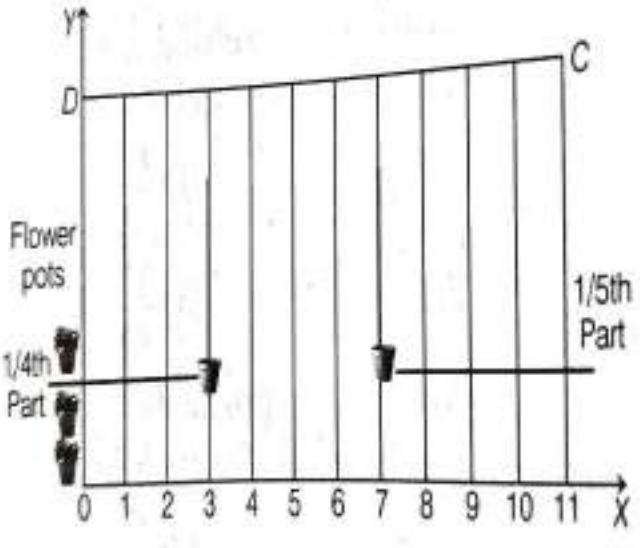
(e) What is the probability of tossing die lands outside the circle? **[1]**

(i) $\frac{31}{42}$ (ii) $\frac{25}{42}$ (iii) $\frac{27}{42}$ (iv) $\frac{29}{40}$

Q. 19. Case Study III

Sports Day Activity in School

In sports day activities of a school, the lines were drawn with chalk powder in rectangular shape OBCD. Each line is $\frac{1}{2}$ m distance from each other. 60 flower pots have been placed at a distance of $\frac{1}{2}$ m from each other along OD. Yamini runs $\frac{1}{4}$th of the distance OD on the 3rd line and makes a red flower. Kamala runs $\frac{1}{5}$th of the distance OD on the 7th line and makes a yellow flower.



(a) Find the position of red and yellow flowers. **[1]**

(i) (1.5, 1.5), (3.5, 12) (ii) (1.5, 1.5), (12, 3.5) (iii) (1.5, 12), (3.5, 9) (iv) None of these.

(b) Find the distance between these flowers. **[1]**

(i) $\sqrt{13}$ (ii) $\sqrt{11}$ (iii) 5 (iv) 4

(c) What is the length of the rectangle field? **[1]**

(i) 5.5 (ii) 5 (iii) 6.5 (iv) 7

(d) Find the area of rectangular field. **[1]**

(i) 160 m^2 (ii) 165 m^2 (iii) 155 m^2 (iv) 145 m^2

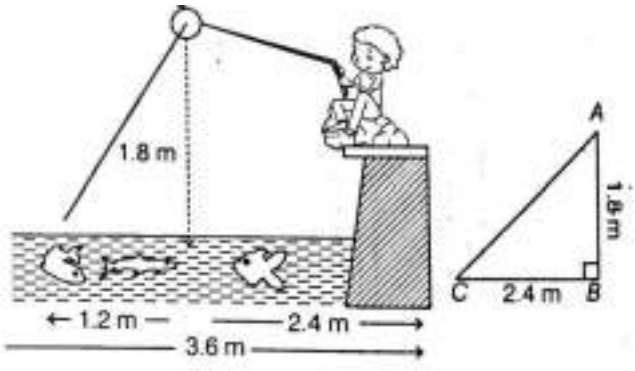
(e) Find the length of the diagonal of rectangle. **[1]**

(i) 29 (ii) 29.5 (iii) 30 (iv) 30.5

Q. 20. Case Study IV

Fishing

Reshma is fly fishing in a stream. The tip of her fishing rod is 1.8 m above the surface of the water and fly at the end of the string rests on the water 3.6 m away from the initial and 2.4 m from a point directly under the tip of the rod.



(a) Assuming that her string (from the tip of her rod to the fly) is taut, how much string does she have out? **[1]**

(i) 2.8 m (ii) 2.4 m (iii) 3.2 m (iv) 3 m

(b) Find the angle subtend the rod to the horizontal in terms of $\tan\theta$. **[1]**

(i) 0.70 (ii) 0.75 (iii) 0.65 (iv) 5

(c) Find the area of triangle formed in the question (a). **[1]**

(i) 2.16 m^2 (ii) 2.30 m^2 (iii) 2.90 m^2 (iv) 3.2 m^2

(d) Write the shape, in which the Reshma is sitting. **[1]**

(i) Rectangle (ii) Parallelogram (iii) Trapezium (iv) Rhombus

(e) If we decrease the width of the triangle, then length of hypotenuse is **[1]**

(i) decrease (ii) increase (iii) can't say anything (iv) None of these.

Part –B

All questions are compulsory. In case of internal choices, attempt any one from those options.

Q. 21. Find the LCM and HCF of 12, 15 and 21 by applying the prime factorisation method. **[2]**

OR

The decimal expansion of the rational number $\frac{47}{2^5 \times 5^3}$, will terminate after how many places of decimal?

Q. 22. Determine the sum of first 35 terms of an AP, if its second term is 2 and seventh term is 22. **[2]**

Q. 23. Compute the Arithmetic Mean by assumed mean method for the following data: **[2]**

Marks obtained	Number of students
0 – 10	14
10 – 20	8
20 – 30	15
30 – 40	21
40 – 50	9
50 – 60	8

Q. 24. Prove that $\frac{\sin\theta - 2\sin^3\theta}{2\cos^3\theta - \cos\theta} = \tan\theta$ **[2]**

OR

Prove that $\cot A + \tan A = \sec A \operatorname{cosec} A$.

Q. 25. If α and β are the zeroes of the quadratic polynomial $f(x) = px^2 + qx + r$, then find the value of $\frac{1}{p\alpha+q} + \frac{1}{p\beta+q}$. **[2]**

Q. 26. Show that the points $(12, 8), (-2, 6)$ and $(6, 0)$ are the vertices of an isosceles right-angled triangle. **[2]**

Q. 27. Prove that $\sqrt{n}$ is not a rational number, if n is not a perfect square. **[3]**

OR

The length, breadth and height of a room are 8 m 25 cm, 6 m 75 cm and 4 m 50 cm respectively. Find the length of the longest rod that can measure the three dimensions of the room exactly.

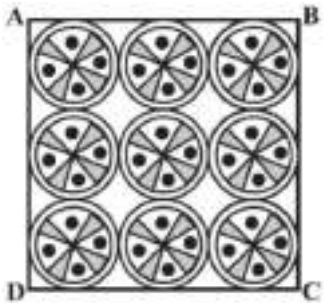
Q. 28. Three chairs and two tables cost Rs. 1850. Five chairs and three tables cost Rs. 2850. Find the cost of seven chairs and three tables. **[3]**

OR

Solve the following equations for x and y.

$x + 4y = 27xy,\ x + 2y = 21xy$

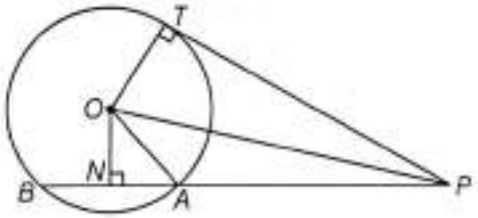
Q. 29. On a square handkerchief, 9 circular designs each of radius 7 cm are made (see the figure). Find the area of the remaining portion of the handkerchief. **[3]**



Q. 30. Find the median for the following data: **[3]**

Class interval	Frequency
130 – 139	4
140 – 149	9
150 – 159	18
160 – 169	28
170 – 179	24
180 – 189	10
190 – 199	7

Q. 31. In the given figure, from an external point P, a tangent PT and a line segment PAB drawn to a circle with centre O. ON is perpendicular on the chord AB. **[3]**



Prove that

(i) $PA \,.\, PB = PN^2 - AN^2$

(ii) $PN^2 - AN^2 = OP^2 - OT^2$

(iii) $PA \,.\, PB = PT^2$

Q. 32. An army pilot is flying an aeroplane at an altitude of 1800 m observes some suspicious activity of two ships which are sailing towards it in the same directions and immediately report it to the navy chief. The angles of depression of the ships as observed from the aeroplane are 60° and 30°, respectively. Find the distance between two ships. **[3]**

Q. 33. Express the following equation in the standard form and then find its roots by factorisation method **[3]**

$$\frac{2x-3}{x-2} + \frac{2x-7}{x-4} = 5\frac{1}{3} \qquad (x \neq 2, x \neq 4).$$

Q.34. Draw a circle of radius 2 cm. Take two points A and B on one of its extended diameter each at a distance of 5 cm from its centre. Draw tangent to the circle from these two points A and B. **[5]**

Q. 35. Prove that **[5]**

$$\cot^2 A\left(\frac{\sec A - 1}{1 + \sin A}\right) + \sec^2 A\left(\frac{\sin A - 1}{1 + \sec A}\right) = 0.$$

OR

Prove that

$$\sqrt{\frac{\operatorname{cosec} A - 1}{\operatorname{cosec} A + 1}} + \sqrt{\frac{\operatorname{cosec} A + 1}{\operatorname{cosec} A - 1}} = 2\sec A.$$

Q. 36. Suppose the 8^{th} term of an AP is 31 and the 15^{th} term is 16 more than the 11^{th} term. **[5]**

(i) Find the AP.

(ii) Find the sum of first 15 terms of this AP.