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Practice Paper No.-2

(Pattern of Secondary Education Board)

SECTION-A

Q.1 Find the H.C.F. of numbers 595and 635.

Q.2 Solve the pair of linear equation $\frac{x}{2}+\frac{2y}{3}=-1$ and $x-\frac{y}{3}=3$.

Q.3 If the first term of an A.P. is a and its common difference is d. Write the formula sum of n^{th} term.

Q.4 Find the distance of a point P(x, y) from the origin.

Q.5 Find the relation between x and y such that the point (x, y) is equidistant from the points (7, 1) and (3, 5).

Q.6 A tangent AB at a point A of a circle of radius 5 cm meets a line through the centre O at a point B, so that AB = 13 cm, then find the length of AB.

Q.7 What is called the common point of a tangent to a circle.

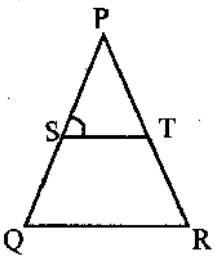
Q.8 Draw a pair of tangents to a circle of radius 5 cm which are in lined to each other at an angle of 600. (Draw figure only)

Q.9 The probability that it will cold today is 0.36. What is that it will not cold today.

Q.10 A die is thrown once than what is the probability of getting even number?

SECTION-B

Q.11 In figure $\frac{PS}{SQ}=\frac{PT}{SR}$ and $\angle PST = \angle PRQ$. Prove that ΔPQR is an isosceles triangle.



Q.12 Two concentric circles are of radii 5 cm 3 cm. Find the length of the chord of the larger circle which touches the smaller circle.

Q.13 A circle is inscribed in a square of side 14 cm. Find the arc of the square not inclined in the circle. [2]

Q.14 A chord of a circle of radius 12 cm substands an angle of 120° at centre. Find the area of the corresponding segment of the circle.

Q.15 One card is drawn from a well shuffled deck of 52 cards. Find the probability of getting.

(i) A king of red colour.

(ii) The jack of hearts.

SECTION-C

Q.16 Show that 5 is irrational.

Q.17 If two zeroes of the polynomial $x^4 + 3x^3 - 20x^2 - 6x + 36$ are $\sqrt{2}$ and $-\sqrt{2}$, find the other zeros of t polynomial.

Q.18 Find two consecutive odd positive integers sum of whose squares in 290.

Q.19 Find the root and their nature of the quadratic equation. $15x^2 - 28 = x$.

Q.20 How many terms of the A.P. 3, 5, 7, 9, … must be added to get the sum 120?

Q.21 Find those points on the x-axis, each of which is at a distance of 5 units from the point A(5,–3).

Q.22 If the points A(1, –2), B(3, 6) C(5, 10) and D(a, b) are the vertices of a parallelogram taken in order. Find the point D(a, b).

Q.23 Prove that $\frac{2\tan 30°}{1+\tan^2 30°} = \sin 60°$.

Q.24 Elevation of the bottom of the flag staff is 45° and the top of the flag staff is 60°. Determine the height of the tower and the horizontal distance.

Q.25 Construct a triangle ABC in which AB = 6 cm, ∠B=60° and AC = 7cm. Construct a triangle similar to triangle ABC sides are $\frac{4}{7}$ of the corresponding sides.

SECTION-D

Q.26 Draw graph of the given equation of the same graph paper: 2x + 3y = 12, x – y = 1. Find the coordination of the vertices of the triangle formed by the two straight lines and the y-axis.

Q.27 D and E points on the side CA and CB respectively of a triangle ABC right angled at C. Prove that $AE^2 + BD^2 = AB^2 + DE^2$.

OR

Prove that the ratio of the areas of two similar triangles is equal to the square of the ratio of their corresponding sides.

Q.28 Prove $\frac{\sec\theta - \tan\theta}{\sec\theta + \tan\theta} = 2\sec\theta.\tan\theta + 2\tan^2\theta.$

OR

Prove $\left(\frac{1+\tan^2 A}{1+\cot^2 A}\right) = \left(\frac{1-\tan A}{1-\cot A}\right)^2 = \tan^2 A$

Q.29 A right circular cylinder having diameter 12cm and height 15 cm is full of ice-cream. The ice-cream is to be filled in cones of height 12 cm and diameter 6 cm having a hemispherical shape on the top. Find the number of such cones which can be filled with ice-cream.

Q.30 To find out the concentration of SQ2 in the air (in parts per million, i.e., ppm), the data was collected for 30 localities in certain city and is presented below:

Concentration of SO_2 (in ppm)	0.00-0.04	0.04-0.08	0.08-0.12	0.12-0.16	0.16-0.20	0.20-0.24
Frequency	4	9	9	2	4	2

Find the mean concentration of SO_2 in the air.

OR

Calculate the median from the following data:

Wages per week (in Rs.)	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Number of workers	4	6	10	20	10	6	4