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Practice Paper No.-1

(Pattern of Secondary Education Board)

SECTION-A

Q.1 Write the rational number $\frac{66}{180}$ is a non-terminating representing decimal expors ion without actually performing the long division.

Q.2 For what value of k, the following system of equations have a unique solution.

$2x + 3ky = 1, 3x - 5y = 7$

Q.3 If $a_n = 13 - 7n$ is nth terms of an arithmetic progression (A.P.) then write the common difference.

Q.4 Find the coordination of the point R which divides the one segment joining the points P(–2, 3) and Q(4, 7) internally in the ratio $\frac{4}{7}$.

Q.5 Write the distance of point (5, –4) from x-axis.

Q.6 If tangent PA and PB from a point P to a circle with centre O are inclined to each other at the angle of 80° then write the value of ΔPOA.

Q.7 The length of the minute hand of a clock in 14 cm. Find the area swept by the minute hand in 5 minute.

Q.8 Divide the line segment of 7.2 cm in the ratio of 3 : 5. Draw figure only.

Q.9 In a circle of radius 21 cm, an arc subtends an angle of 60° at the centre. Find the length of arc.

Q.10 What is the probability that ordinary year has 53 Sundays?

SECTION-B

Q.11 In a line intersects side AB and AC of a ΔABC at D and E respectively and in parallel to BC.

Q.12 In ΔABC, right angled at B, AB = 24 cm, BC = 7 cm. Find sinA and cosA.

Q.13 Find the value of cosec31° – sec 59°.

Q.14 Find the value of cos38° cos 52° – sin 38° sin 52°.

Q.15 How many silver coins 1.75 cm in diameter and of thickness 2 mm, must be melted to form a cuboid of dimension 5.5 cm × 10 cm × 3.5 cm?

SECTION-C

Q.16 Use Euclid's division lemma to show that the square of any opposite integer in either of the form 3m or 3m + 1 for same integer m.

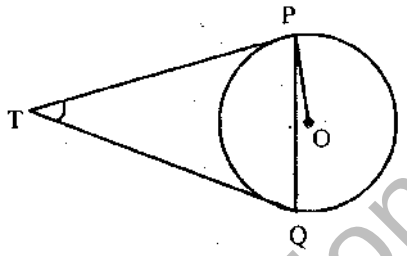
Q.17 Divide $x^3 - 3x^2 + 5x - 3$ by $x^2 - 2$ and verify the division algorithm.

Q.18 Find the A.P. whose sum of three terms in 15 and their product in 105.

Q.19 If sin3A = cos (A–26°), where 3A is an acute angle, find the value of A.

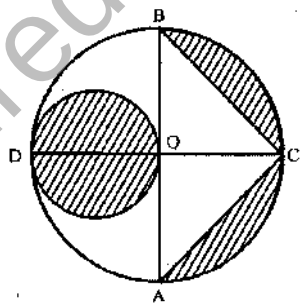
Q.20 Two pillars of equal height stand on either side of a roadway which is 150 m wide. From a point on the roadway between the pillors, the elevations of the top of the pillor are 60° and 30°. Find the height of the pillors and the position of the point.

Q.21 Two tangents TP and TQ are drawn to a circle with centre O from an external point P. Prove that ∠PTQ = 2∠OPQ.



Q.22 Draw a circle of diameter 8 cm. From a point P, 7 cm away from its centre, Construct a pair of tangents to the circle. Measure the length of the tangent segments.

Q.23 In figure, AB and CD are two diameters of a circle (with centre O) perpendicular to each other and OD is the diameter of the smaller circle. If OA = 7 cm, find the area of the shaded region.



Q.24 A bucket made of alluminium sheet is of height 20 cm and its upper and lower ends are of radius 25 cm and 10 cm respectively.

Find the cost of making the bucket if the alluminium sheet. Costs Rs. 70 per 100 cm2.

Q.25 Savita and Vinita are friends. What is the probability that both have

(i) Different birthdays. (ii) The same birthday? (Ignoring leap year)

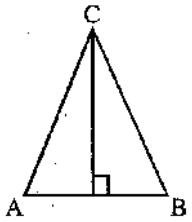
SECTION-D

Q.26 Solve the following system of equations graphically. 3x – y = 3, x – 2y = –4.

Shade the area of the region bounded by the lines are x-axis.

Q.27 The diameter of a rectangular field is 82 m and its area is 400 m^2. Find the breadth of the rectangle. [6]

Q.28 In figures, $\angle ACB = 90°$, $CD \perp AB$. Prove that $CD^2 = BD.AD$



OR

Q.28 Prove in right triangle, the square of the hypotenuse is equal to the sum of the squares of other two sides.

Q.29 Show that points A(5, 6), B(1, 5), C(2, 1) and D(6, 2) are the vertices of a square.

Q.30 Thirty women were examined in a hospital by a doctor and the number of heart beats per minute were recorded and summarized as follows. Find the mean heart beats per minute for these women, choosing a suitable method.

Number of heart beats per minute	65-68	68-71	71-74	74-77	77-80	80-83	83-86
Number of women	2	4	3	8	7	4	2

OR

Q.30 The made of the following frequency distribution is 55. Find the values of x and y.

Class-interval	0-15	15-30	30-45	45-60	60-75	75-90	Total
Frequency	6	7	y	15	10	y	51