

# JAIPUR EDUCATION PLUS

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## Practice Paper No.-3

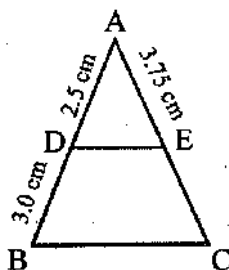
### (Pattern of Secondary Education Board)

#### SECTION-A

- Q.1 Write rational number  $\frac{33}{50}$  in terminating decimal exports without actually performing the long division.
- Q.2 For what value of k the following equation are inconstant?  $x - 4y = 6$ ,  $3x + ky = 5$ .
- Q.3 If 2, m, 99 in m A.P., find the value of m.
- Q.4 Find the distance between two points (a, b) and  $(-a, -b)$ .
- Q.5 Write the coordination of the point which divides the line segment joining the point A(4, -3) and B(9, 7) in 3: 2 internally.
- Q.6 If tangent AB and AC from a point A to a circle with centre O are such that  $\angle BAC = 50^\circ$ , then write value of  $\angle BOC$ .
- Q.7 Find the area of sector of an angle  $P^\circ$  of a circle with radius R.
- Q.8 From a point Q, the length of the tangent to a circle is 24 cm and the distance of Q from the centre is 25 cm. Find the radius of circle.
- Q.9 A bag contains 8 red balls and 5 black balls. A ball is the probability that ball draw is red?
- Q.10 What is the probability that answer select from the numbers 1, 2, 3... 15 is a multiple of 4.

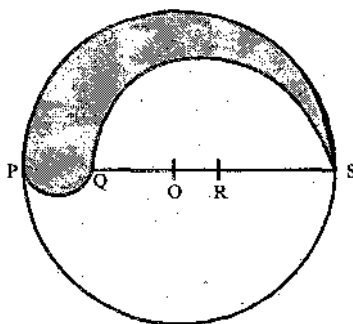
#### SECTION-B

- Q.11 In figure, DE is parallel to base BC. If AD = 2.5 cm, BD = 3.0 cm and AE = 3.75 cm. Find the length of AC.



- Q.12 BC and BD are tangents of the circle C(0, r) such that  $\angle CBD = 120^\circ$ . Prove that  $BO = 2BC$ .

- Q.13 In a circle of radius 21 cm. An arc subtends an angle of  $60^\circ$  at the centre. Find the length of the arc.
- Q.14 PQRS is a diameter of a circle of radius 6 cm. The lengths PQ, QR and RS are drawn on PQ and QS as diameters, as shown in figure. Find the perimeter of the shaded region.



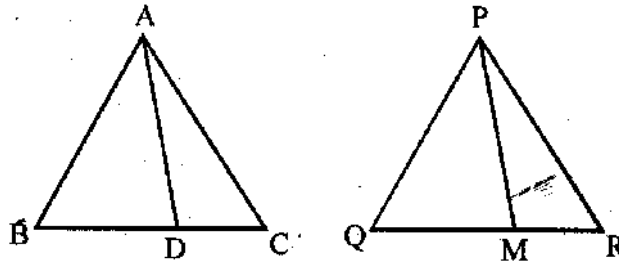
- Q.15 A bag contains 8 red balls and  $x$  blue balls, the odd against drawing a blue ball are  $2 : 5$ . What is the value of  $x$ ?

### SECTION-C

- Q.16 Using Euclid's division algorithm, find the H.C.F. of 56, 96 and 404.
- Q.17 Find the zeroes of the quadratic polynomials  $x^2 - 2x - 8$  and verify the relationship between zeroes and coefficients.
- Q.18 A motor boat 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.
- Q.19 Find the nature and root of the equation  $x + \frac{1}{3} = 3, x \neq 0$ .
- Q.20 How many numbers of two digits are divisible by 7?
- Q.21 Show that the point  $(1, 5)$ ,  $(2, 3)$  and  $(-2, -11)$  are not collinear.
- Q.22 Find the ratio in which the segment joining  $A(1, -5)$  and  $B(-4, 5)$  is divided by  $x$ -axis. Also find the coordination of the point of division.
- Q.23 If  $A, B, C$  are the interior angles of a triangle  $ABC$ , show that  $\sin \frac{B+C}{2} = \cos \frac{A}{2}$ .
- Q.24 A straight highway leads to the foot of a tower. A man standing at the top of the tower observes a car at an angle of depression of  $30^\circ$ , which is approaching the foot of the tower with a uniform speed. Six second later, the angle of depression of the car is found to be  $60^\circ$ . Find the time taken by the car to reach the foot of the tower from this point.
- Q.25 Draw a circle of radius 3 cm. Take two points  $P$  and  $Q$  on one of its extended diameters each at a distance of 7 cm from its centre. Draw tangents to the circle from these two points  $P$  and  $Q$ .
- Q.26 Solve the following system of equation graphically.  $2x - 5y + 4 = 0$  and  $2x + y - 8 = 0$ . Find the points where the lines meet the  $y$ -axis.
- Q.27 If a line is drawn parallel to one side of a triangle to intersect the other two sides in distinct points, the other two sides are divided in the same ratio.

OR

Sides AB and BC and median AD of a triangle ABC are respectively proportional to sides PQ and QR and median PM of  $\triangle PQR$  (see figure). Prove that  $\triangle ABC \sim \triangle PQR$



Q.28 Prove that  $\frac{1 + \sin \theta}{\cos \theta} + \frac{\cos \theta}{1 + \sin \theta} = 2 \sec \theta$

OR

Prove that  $\frac{\tan A}{1 - \cot A} - \frac{\cot A}{1 - \tan A} = 1 + \tan A + \cot A$

- Q.29 An iron pillar has some part in the form of a right circular cylinder and remaining in the form of a right circular cone. The radius of the base each of cone and cylinder is 8 cm. The cylindrical part is 240 cm high and the conical part is 36 cm high. Find the weight of the pillar of one  $\text{cm}^3$  of iron weighs 7.8 gram.

- Q.30 Calculate the arithmetic Mean of the following frequency distribution.

Class interval	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	12	15	11	20	14	15	13

OR

Find the median for the following data:

Class interval	0-50	50-100	100-150	150-200	200-250	250-300
Frequency	6	9	14	10	12	9