MATHEMATICS SAMPLE PAPER FOR CLASS 9 (ICSE)

General Instructions

1.Attempt all questions from section A

2.Attempt any 4 questions from section B

3.Time allowed: $2\frac{1}{2}$ hours. Max. Marks: 80

Sec -A

Question :1 **(10)**

a.) Find the slope and y-intercept of the line 3x – 4y + 2 = 0

b.) Factorize the given expression completely:

$6X^2 + 7X – 5$

c.) Simplify: $\frac{7\sqrt{3}}{\sqrt{10}+\sqrt{3}} - \frac{2\sqrt{5}}{\sqrt{6}+\sqrt{5}}$

Question :2 **(10)**

a.) Solve the simultaneous linear equation: 3/x + 4y = 7 5/x + 6y = 13

b.) Find the distance between the given points:

i.) (15,13) and (-15, -13)

ii.) (6,5) and (-4,3)

c.) Find the number of sides of a regular polygon if each of its interior angles is 108º.

Question :3 **(10)**

a). Solve the following pairs of linear equations using cross multiplication method:

5X – 3Y = 2

4X + 7Y = -3

b.) Evaluate:

$3 \log 2 - \frac{1}{3} \log 27 + \log 12 – \log 4 + 3 \log 5$

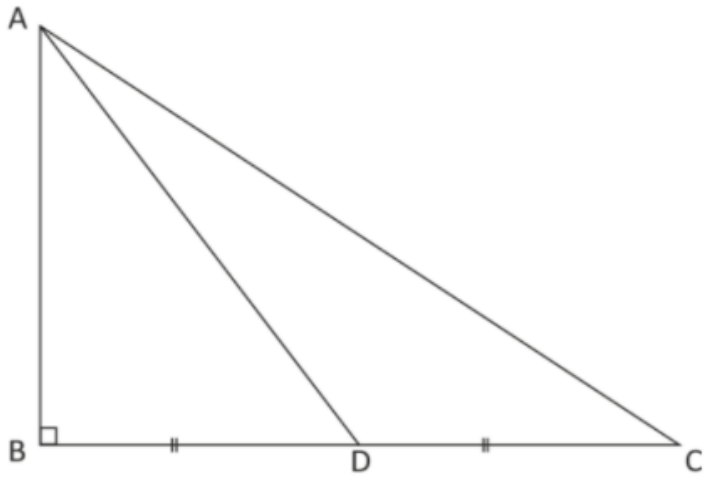
c.) A boat take 2 hours to go to 40 Km down the stream and it return in 4. Find the speed of boat in still water and the speed of stream

Question :4 **(10)**

a). Construct a parallelogram ABCD in which AB = 6.4 cm, AD = 5.2 cm and the perpendicular distance between AB and DC is 4 cm.

b.) Two equal sums of money were lent at 10% and 13% p.a. on simple interest. At the end of 3 years the total interest received is Rs6900. Find the total sum lent.

c.) In the given figure triangle ABC is right angle triangle with angle B = 90 degree and D is the midpoint of side BC. Prove that $AC^2 = AD^2 + 3CD^2$



Sec – B

Question :5 **(10)**

a). Prove that opposite angles of a parallelogram are equal.

b). The given table has information about the distribution of the heights of a group of teachers

Height	130-140	140-150	150-160	160-170	170-180	180-190	190-100
No. of Teachers	4	12	45	26	27	12	8

Use a graph draw an Ogive distribution and find

(i) The inter quartile range

(ii) The no. of teachers whose height are more than 158 cm

(iii) The no. of teachers whose height are less than 148 cm.

c). Find:

(i) Mean

(ii) Median

For the following observations:

10, 47, 3, 9, 17, 27, 4, 48, 12, 15

Question :6 **(10)**

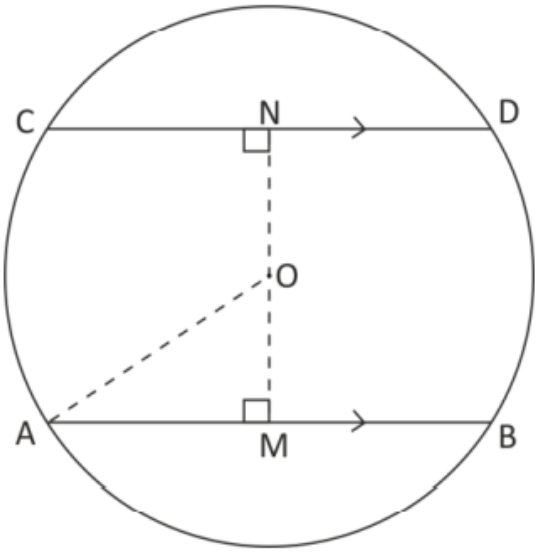
a). If 5 tan A = 4, find the value of (5 sin A – 3 cos A)/ (5 sin A + 2 cos A)

b). The manufacturer sold a bag to a shopkeeper for Rs.5400. The shopkeeper sold it to a trader at a profit of Rs.3000. If the trader sold it to the consumer at a profit of Rs.3400, find:

(i) The total VAT (value added tax) collected by the state government at the rate of 20%.

(ii) The interest that the consumer has to pays for the bag.

c). In the given diagram 'O' is the Centre of the circle and AB is parallel to CD. AB = 24 cm and distance between the chords AB and CD is 17 cm. If the radius of the circle is 13 cm, find the length of the chord CD



Question :7 **(10)**

a). Simplify: $(2X + P – C)^2 - (2X – P + C)^2$

b). Plot the points (0, 4), (−2, 0) and (2, 0) in rectangular co-ordinate system. Join them and mention which geometrical figure you obtain.

c). Rama wishes to start a $400m^2$ rectangular fruit garden. Since she has only 30 m barbed wire, she fences three sides of the garden letting his house front wall which act as the fourth side of the fence. Find the dimensions of the rectangular garden.

Question :8 **(10)**

a). Construct a regular hexagon with side 4 cm.

b). In the given diagram ABCD is a Parallelogram. ▲APD and ▲BQC are equilateral triangles.

Prove that:

(i) Angle PAB = Angle QCD
(ii) PB = QD

c). If $x = a \cos A + b \sin A$ and $y = a \sin A - b \cos A$.

Prove that $x^2 + y^2 = a^2 + b^2$