MATHS
SAMPLE QUESTION PAPER
Class: IX
Maximum Marks: 80
Time duration: 2hrs
No of pages: 3

General Instructions:
Attempt all questions in Section A.
Attempt any four questions in Section B.
Maximum marks for each question is indicated in [ ] against each question.
Give proper steps and working.

Section A (40 Marks)
(Attempt all questions)

Question 1:
   a) Calculate the compound interest on Rs 8600 in 2 years at 15 % per annum. [3]
   b) If the sum of three consecutive integers is 63; find the smallest number. [3]
   c) If 5(1-2x)= 15; evaluate $x^2-3x+2$ [4]

Question 2:
   a) Plot the points A (-3,0),B(-2,2) and C(-5,-4)on a graph paper and check whether they are collinear or not. [5]
   b) Solve the equation
      \[
      \frac{2a}{m} + \frac{b}{3n} = 7
      \]

Question 3:
   a) Two articles A and B together cost Rs 6735. If articles A costs 20% more than B. find the cost of each articles [3]
   b) Solve $2x^2+6x+40 = 3$ [4]
   c) If $x = 2 + 2$ find $x+1/x$ b)(x-x)^2 [3]

Question 4:
   a) If a quadrilateral formed by joining the mid points of the adjacent sides of quadrilateral ABCD is a rectangle, show the diagonals AC and BD intersect at right angle. [3]
   b) A trader gives 35% discount on his article and still makes a profit of 15%. Find his profit percent, if he sells his article at the marked price. [4]
   c) Construct a triangle ABC in which side BC = 6.2 cm angle ABC =600 and length of perpendicular from vector A on side BC = 3cm [3]
Section B (40 Marks)
(Assert any 4 questions)

Question 5:

a) plot the graph of the line
   \[2x-3y+6 = 0\]

b) Water flow into a tank, 150m long and 100m broad, through a pipe whose cross-section is 2dm by 1.5dm at the speed of 20km per hour. In what time, will the water be 3m deep?

\[3\]

c) Find \(\log(\sqrt{54} \cdot \sqrt{243})\)

\[3\]

Question 6:

a) A dealer is selling an article at a discount 5% on the marked price a) What is the selling price, if the market price is Rs 550, b) What is the cost price, if the market price is 15% above the cost price.

\[3\]

b) In a right angled triangle prove that the hypotenuse is the greatest side.

\[3\]

c) Prove that \(<a+<b+<c = 4\) right angles

\[4\]

Question 7:

a) Calculate the area of the quadrilateral ABCD in which, \(A = 900, AB = 16CM, AD = 16CM\) and \(BC = CD = 14.5cm\).

\[3\]

b) In an acute angled triangle ABC, the internal bisector of angle BAC meets opposite side BC at point D. If BD = CD, prove that \(\triangle ABC\) is isosceles.

\[3\]

c) Prove that in any quadrilateral, the sum of the length of four sides exceeds the sum of the length of its diagonal.

\[4\]

Question 8:

a) In a triangle ABC, AD is a median and E is mid point of median AD. A line through B and E meets AC at point F. prove that \(AC = 3AF\)

\[5\]

b) Find the value of \(a\) and \(y\)

\[5\]

\[
\frac{3}{x+y} + \frac{2}{x-y} = 2
\]

Question 9:

a) Solve

\[5\]
217x + 131y = 913
131x + 217y = 827

b) In trapezium ABCD, AB is parallel to DC; P and Q are the mid points of AD and BC respectively. BP produced meets CD produced at point E. Prove that:

(i) point P bisects BE
(ii) PQ is parallel to AB.