

MATHS  
SAMPLE QUESTION PAPER

Class: IX

Maximum Marks: 80

Time duration: 2hrs

No of pages:2

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) Express each of the following as rational number [3]  
a) 0.56 b) 0.2143 c) 3.52
- b) Given  $x = \frac{b(m-2)}{a(m-3)}$  find  $m$  when  $a=5$ ,  $b=4$  and  $x=1$  [4]
- c) A dealer sold two tv sets at the rate of Rs 5600 each, gaining 10% income on one set and losing 15% on the other set, find his net gain or loss and also the expenses on selling tv. [3]

**Question 2:**

- a) Rationalize [4]  
If  $\log(a+1) = \log(4a-3) - \log 3$ ; find  $a$
- b) Given  $\frac{1}{f} = \frac{1}{v} + \frac{1}{u}$ ; find  $v$ , if  $u = 3f$  and  $f = 10$  [3]
- c) If  $(2ax+1)(3x+1) = 6a(x+1)$  and  $x=1$ , find the value of  $a$ . [3]

**Question 3:**

- a) In a  $\Delta ABC$ , angle B is obtuse. D and E are mid points of AB and BC respectively. F is a point on side AC such that EF is parallel to AB. show that BEFD is a parallelogram [3]
- b) State the law of indices [4]
- c) Evaluate :  $8 \cdot 2^3 \cdot 16^{-3/4}$  [3]

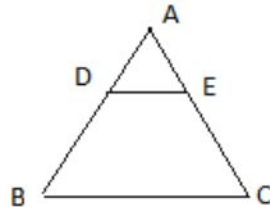
**Question 4:**

- a) In a  $\Delta ABC$ , D and E are the mid points of the sides AB and AC respectively. Through E, a straight line is drawn parallel to AB to meet BC at F. Prove that BDEF is a parallelogram. If  $AB=18\text{cm}$ ,  $AC=14\text{cm}$ , and  $BC=20\text{cm}$ . find the perimeter of the parallelogram BDEF. [4]
- b) Find the logarithm of 0.001 to the base 10 [3]
- c) The difference between the CI and SI on Rs 16800 for three years is rs 20 at the same rate of interest. Find the rate of interest. [3]

**Section B (40 Marks)**  
***(Attempt any 4 questions)***

**Question 5:**

- a) In order to maintain the price line, a trader allows discount of 15% on the marked price of the goods in his shop. However, he still makes profit of 20% on the cost price. Find the profit percent, he would have made, had he sold the goods at the same rate. [5]
- b) Prove that DE is parallel to BC [5]



**Question 6:**

- a) Solve [5]  
 $3(2u+v) = 7uv$   
 $3(u+3v) = 11uv$
- b) Use the graphical method to find the value of 'x' for which the expressions  $(3x+2)/2$  and  $(3/4)x-2$  are equal. [5]

**Question 7:**

- a) Construct a triangle whose sides are 6cm and 3.5 cm, and the angle opposite to the shorter side 30°. How many triangles can be constructed? Give reason [5]
- b) In a triangle ABC, the bisector of the exterior angle B and C meet at O. Prove that  $\angle BOC = 90^\circ - \frac{1}{2}\angle A$  [5]

**Question 8:**

- a) The average weight of article is x kg and the total weight of another n article is y kg; find  
 i) total weight of all the (m+n) article      ii) average weight of all article. [4]
- b) If  $x = \frac{1}{x-5}$ , find i)  $x-1/x$       ii)  $x^2+1/x^2$  [3]
- c) Factorize the term  $8(3x-2y)^2-6x+4y-1$  [3]

**Question 9:**

- 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. [4]
- 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. [3]
- c) Construct a triangle ABC in which side BC = 9 cm, angle ABC = 80° and length of perpendicular from vertex A on side BC = 5 cm [3]