INDIAN SCHOOL SOHAR
FORMATIVE ASSESSMENT- 2
MATHEMATICS

Date: 25-08-2013   Time: 45 min.
Class: X   Marks: 25

General Instructions:

➢ All questions are compulsory.
➢ Q.No.1 to Q.No.3 are multiple choice questions, carry 1 mark each.
➢ Q.No.4 to Q.No.7 carry 2 marks each, Q.No.8 to Q.No.9 carry 3 marks each.
➢ Q.No.10 to Q.No.11 carry 4 marks each.

1. In Δ ABC, if DE∥BC, AD = 12 cm, DB = x cm, AE = x cm, EC = 3 cm, find x.

    (a) 4 cm   (b) 6 cm   (c) 8 cm   (d) 9 cm

2. $12 \tan^2 A - 12 \sec^2 A =$ _____.

    (a) 12   (b) 1   (c) -1   (d) -12

3. ABC and BDE are two equilateral triangles such that D is the midpoint of BC. Ratio of the areas of triangles ABC and BDE is

    (a) 4:1   (b) 2:1   (c) 1:4   (d) 1:2

4. The diagonals of a quadrilateral ABCD intersect each other at the point O such that

$\dfrac{AO}{BO} = \dfrac{CO}{DO}$ .Show that ABCD is a trapezium.

5. Two poles of heights 6m and 11m stand on a plane ground. If the distance between the feet of the poles is 12m,find the distance between their tops.

6. If $\csc A = \dfrac{13}{12}$, find the value of cot A.

7. If sin 5A = cos 4A, where 5A and 4A are acute angles, find the value of A.

8. Prove that the area of an equilateral triangle described on one side of a square is equal to half the area of the equilateral triangle described on one of its diagonals.

9. Evaluate $\dfrac{\sec 39^0}{\csc 51^0} + \dfrac{2}{\sqrt{3}} \tan 17^0 \tan 38^0 \tan 60^0 \tan 52^0 \tan 73^0 - 3(\sin^2 31^0 + \sin^2 59^0).$

10. If a line is drawn parallel to one side of a triangle to intersect the other two sides in distinct points ,then prove that the other two sides are divided in the same ratio.

11. Prove the identity, $\dfrac{\cos A - \sin A + 1}{\cos A + \sin A - 1} = \csc A + \cot A$

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