



# TEST PAPER: MATHEMATICS

Time: 50 Minutes

Class: 10<sup>th</sup> I.C.S.E.

Max. Marks: 30 Marks

Date: 4<sup>th</sup> July, 2018

**Marking Scheme:** Four questions carry 10 marks each. Questions have 3 subparts each. Subparts (a) and (b) carry 3 marks each and subpart (c) carries 4 marks.

## Question 1:

a. Prove that  $\sec A (1 - \sin A) (\sec A + \tan A) = 1$ .

b. Prove that:

$$(\operatorname{cosec} \theta - \cot \theta)^2 = \frac{1 - \cos \theta}{1 + \cos \theta}$$

c. Find the equation of the right bisector of the line segment joining the points (3, 4) and (-1, 2).

## Question 2:

a. Equation of a line is  $3x - 4y + 10 = 0$ . Find its

- (i) slope,
- (ii) x-intercept
- (iii) y-intercept

a. Find the equation of a line perpendicular to the line  $x - 2y + 3 = 0$  and passing through the point (1, -2).

b. Prove that:

$$\frac{1 + \sec A}{\sec A} = \frac{\sin^2 A}{1 - \cos A}$$

## Question 3:

a. Find equation of the line parallel to the line  $3x - 4y + 2 = 0$  and passing through the point (-2, 3).

b. Find the equation of the line parallel to y-axis and drawn through the point of intersection of the lines  $x - 7y + 5 = 0$  and  $3x + y = 0$ .

d. Evaluate:

(i)  $\sin 60^\circ \cos 30^\circ + \sin 30^\circ \cos 60^\circ$

(ii)  $2 \tan^2 45^\circ + \cos^2 30^\circ - \sin^2 60^\circ$