TEST PAPER: MATHEMATICS

Time: 50 Minutes **Class: 10th I.C.S.E.**

Max. Marks: 30 Marks **Date: 21st November, 2018**

Marking Scheme: *Three 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. The upper part of a tree, broken over by the wind, makes an angle of 45^{o} with the ground; and the distance from the root to the point where the top of the tree touches the ground, is 15 m. What was the height of the tree before it was broken?
b. Solve the given inequation and graph it on a number line: $2y-3 < y+1 < 4y + 7, y \in R$.
c. A hotel bill for a number of people for overnight stay is Rs.4,800. If there were 4 people more, the bill each person had to pay, would have reduced by Rs.200. find the number of people staying overnight.

Question 2:

a. Use the remainder theorem to factorize the following expression: $2x^3 + x^2 - 13x + 6$.
b. A man invests Rs. 1680 in buying shares of nominal value Rs. 24 and selling at 12% premium. The dividend on the shares is 15% per annum. Calculate: i) The number of shares he buys; ii) The dividend he receives.
c. Find the height of a tree when it is found that on walking away from it 20 m in a horizontal line through its base, the elevation of its top changes from 60^{o} to 30^{o}.

Question 3:

a. Find the equation of a line passing through the point (2, 3) and having the x-intercept of 4 units.
b. Calculate the ratio in which the line joining A (6, 5) and B (4, -3) is divided by the line y = 2. Also find the coordinates of the point.
c. Find the first term and common difference of an Arithmetic Progression whose third term is 7 and seventh term is two more than thrice of its third term.