TEST PAPER: MATHEMATICS

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

Max. Marks: 30 Marks **Date: 4th 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. Use Euclid's algorithm to find the HCF of 52 and 130

b. The equation $3x^2 - 12x + z - 5 = 0$ has equal roots. Find the value of z.

c. A two-digit number is made of two consecutive digits such that the sum of their squares is 4 less than the number. Find the two-digit number.

Question 2:

a. What kind of decimal expansion does $\frac{441}{2^2.5^7.7^2}$, have? Show the working and state the reason.

b. Five times of a positive integer is less than twice its square by 3. Find the integer.

c. Prove that the following is an irrational number:

$15 + 17\sqrt{3}$

Question 3:

a. Find the age of a man if his age 40 years hence will become equal to the square of what his age was 32 years ago.

b. If HCF (6, a) = 2 and LCM (6, a) = 60, then find a.

c. Convert the following to the standard quadratic equation form: $\mathbf{ax^2 + bx + c}$

i) $\frac{100}{x} - \frac{100}{x+5} = 1$

ii) $\frac{4}{x+2} - \frac{1}{x+3} = \frac{4}{2x+1}$