TEST PAPER: MATHEMATICS

Time: 50 Minutes   **Class:** 9th C.B.S.E.
Max. Marks: 30 Marks   **Date:** 25th April, 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. Rationalise:
$$\frac{1}{\sqrt{2} - \sqrt{3}}$$

b. Simplify and evaluate the following:
   i. $(2 + \sqrt{2}) \times (2 - \sqrt{2})$
   ii. $\left(2 - \sqrt{3}\right)^2$

c. Express each of the following as a rational number (p/q form).
   (i) $4.\overline{52}$
   (ii) $-2.\overline{3}$

Question 2:

a. Find the value of k, if x – 1 is a factor of $4x^3 + 3x^2 - 4x + k$.

b. Find the remainder (using remainder theorem) when $x^3 + 4x + 2$ is divisible by $x + 2$

c. Represent $\sqrt{3.2}$ on a number line

Question 3:

a. Factorize: $4x^2 + 9y^2 + 16z^2 + 12xy - 24yz - 16xz$

b. Find the remainder and quotient (using division algorithm) when
   $2x^3 - 3x^2 + 7x - 8$ is divided by x – 1

c. Evaluate each of the following using suitable identities:
   (i) $(101)^3$
   (ii) $(99)^3$