TEST PAPER: MATHEMATICS

Time: 50 Minutes **Class:** 9th C.B.S.E.

Max. Marks: 30 Marks **Date:** 11th April, 2018

Marking Scheme: *Three questions carry 10 marks each. Question 1 has 10 MCQ's of 1 mark each. Questions 2 and 3 have 3 subparts each. Subparts (a) and (b) carry 3 marks each and subpart (c) carries 4 marks. Question 1 is compulsory. Attempt any 2 out of questions numbers 2, 3 and 4.*

Question 1:

1. On dividing $6\sqrt{27}$ by $2\sqrt{3}$, we get
   (a) $3\sqrt{9}$ (b) 6 (c) 9 (d) none of these

2. A rational number equivalent to $\frac{5}{7}$ is
   (a) $\frac{15}{17}$ (b) $\frac{25}{27}$ (c) $\frac{10}{14}$ (d) $\frac{10}{27}$

3. Identify the polynomial
   (a) $x^{-2} + x^{-1} + 5$ (b) $x^2 + 5\sqrt{x} + 7$ (c) $\frac{1}{x^3} + 7$ (d) $3x^2 + 7$

4. The zero of the polynomial p(x) = 2x + 5 is
   (a) 2 (b) 5 (c) $\frac{2}{5}$ (d) $-\frac{5}{2}$

5. The rational number $0.\overline{3}$ can also be written as
   (a) 0.3 (b) $\frac{3}{10}$ (c) 0.33 (d) $\frac{1}{3}$

6. The polynomial of type $ax^2 + bx + c$, $a = 0$ is of type
   (a) linear (b) quadratic (c) cubic (d) Biquadratic

7. The value of k, if (x – 1) is a factor of $4x^3 + 3x^2 - 4x + k$, is
   (a) 1 (b) 2 (c) –3 (d) 3

8. If x + 2 is a factor of $x^3 - 2ax^2 + 16$, then value of a is
   (a) 3 (b) 1 (c) 4 (d) 2

9. The value of $\frac{1}{\sqrt{10}}$ when $\sqrt{10} = 3.162$ is
   (a) .3162 (b) 31.62 (c) .03162 (d) 316.2

10. $(16)^{3/4}$ is equal to
    (a) 2 (b) 4 (c) 8 (d) 16

Question 2:

1. a. Represent-$13/5$ on a number line
   b. Represent $\sqrt{2}$ on a number line

2. Rationalise: $\frac{1}{2\sqrt{2}-\sqrt{3}}$

3. Find the remainder and quotient on division of $2x^2 + 3x + 1$ by $x + 2$ using division algorithm.

Question 3:

1. Represent $0.\overline{245}$ in the form p/q.

2. Represent $\sqrt{3.4}$ on a number line

3. a. Use the Remainder Theorem, find the remainder when $x^4 - 3x^2 + 4x - 12$ is divided by $x - 1$.
   b. Find the value of k, if $x - 1$ is a factor of $4x^3 + 3x^2 - 4x + k$.

Question 4:

1. Using division algorithm, find the quotient and the remainder on dividing f(x) by g(x) , where $f(x) = 6x^3 + 12x^2 + 6x + 12$ and $g(x) = x+2$. Is g(x) a factor of f(x)?

2. a. Verify whether 2 and 0 are zeroes of the polynomial $x^2 - 2x$.
   b. Find the remainder when $x^3 - ax^2 + 6x - a$ is divisible by $x - a$ using remainder theorem.

3. Represent $2.144\ldots$ on a number line upto 3 decimal places using successive magnification