KENDRIYA VIDYALAYA AFS MANAURI ALLAHABAD

PERIODIC TEST – 1 (2017 – 18) CLASS – IX

MATHEMATICS

T.T. 1:30 **M.M. 40**

General Instructions:

1. All questions are compulsory.
2. Question paper is divided into four sections: Section A contains 4 questions each carry 1 mark, Section B contains 4 questions each carry 2 marks, Section C contains 4 questions each carry 3 marks and Section D contains 4 questions each carry 4 marks.

SECTION –A

1. Simplify : $(32)^{\overline{1/5}}$

2. One of the angles of a triangle is 50º and the other two angles are equal. Find the measure of each of the equal angles.

3. If $x + 6$ is a factor of $p(x) = x^3 + 3x^2 + 4x + k$, find the value of k.

4. Find the value of k, if $x = 2$, $y = 1$ is a solution of the equation $2x + 3y = k$.

SECTION – B

5. Show that 1.272727……. can be expressed in the form of $\frac{p}{q}$, where p and q are integers and $q \neq 0$.

6. Write any four axioms.

7. Factorise: $4x^2 + 9y^2 + z^2 + 12xy - 6yz - 4zx$

8. Show $\sqrt{2}$ on number line.

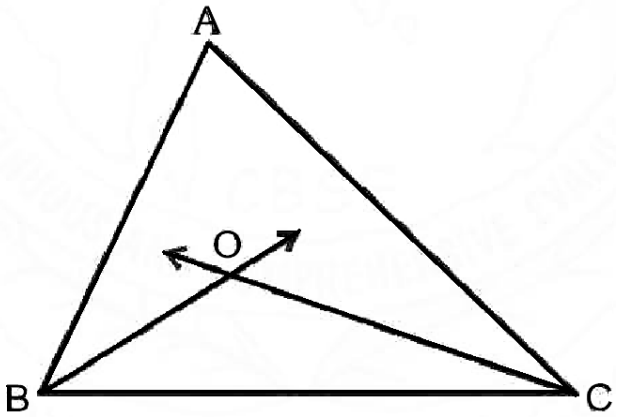
SECTION – C

9. If a point C lies between two points A and B such that AC = BC, then prove that AC = $\frac{1}{2}AB$ .Explain by drawing the figure.

10. The Autorikshaw fare in a city is charged Rs 10 for the first kilometer and @ Rs 4 per kilometer for subsequent distance covered. Write the linear equation to express the above statement. Draw the graph of the linear equation.

11. If a and b are rational numbers and $\frac{7-4\sqrt{3}}{7+4\sqrt{3}} = a + b\sqrt{3}$, then find the value of a and b.

12. Bisectors of angles B and C of a triangle ABC intersect each other at the point O(see below figure). Prove that $\angle BOC = 90° + \frac{1}{2}\angle A$.



SECTION – D

13. Prove that "The sum of all interior angles of a triangle is 180^0". If the angles of a triangle are in the ratio 2 : 3 : 4, find the angles of the triangle.

14. The polynomial $f(x)= x^4 – 2x^3 +3x^2 – ax + b$ when divided by $(x – 1)$ and $(x + 1)$ leaves the remainders 5 and 19 respectively. Find the values of a and b. Hence, find the remainder when f(x) is divided by $(x – 3)$.

15. Plot the following points on a graph paper:

x	1	2	3	4	5
y	5	8	11	14	17

Join these points. What do you observe?

16. Solve the equation $2x + 1 = x – 3$, and represent the solution(s) on
(i) the number line,
(ii) the Cartesian plane.