SYLLABUS FOR PERIODIC WRITTEN TEST 1

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| TOPICS | WEITAGE |
| REAL NUMBER : Euclid’s division lemma, Fundamental Theorem of Arithmetic - statements after reviewing work done earlier and after illustrating and motivating through examples, Proofs of irrationality of Decimal representation of rational numbers in terms of terminating/non-terminating recurring decimals. | 10 |
| POLYNOMIALS : Zeros of a polynomial. Relationship between zeros and coefficients of quadratic polynomials. Statement and simple problems on division algorithm for polynomials with real coefficients. | 10 |
| PAIR OF LINEAR EQUATIONS IN TWO VARIABLES :Pair of linear equations in two variables and graphical method of their solution, consistency/inconsistency. Algebraic conditions for number of solutions. Solution of a pair of linear equations in two variables algebraically - by substitution, by elimination and by cross multiplication method. Simple situational problems. Simple problems on equations reducible to linear equations. | 10 |
| LINES (In two-dimensions) : Review: Concepts of coordinate geometry, graphs of linear equations. Distance formula. Section formula (internal division). Area of a triangle. | 10 |
| TRIANGLES Definitions, examples, counter examples of similar triangles.  1. (Prove) If a line is drawn parallel to one side of a triangle to intersect the other two sides in distinct points, the other two sides are divided in the same ratio.  2. (Motivate) If a line divides two sides of a triangle in the same ratio, the line is parallel to the third side.  3. (Motivate) If in two triangles, the corresponding angles are equal, their corresponding sides are proportional and the triangles are similar.  4. (Motivate) If the corresponding sides of two triangles are proportional, their corresponding angles are equal and the two triangles are similar.  5. (Motivate) If one angle of a triangle is equal to one angle of another triangle and the sides including these angles are proportional, the two triangles are similar.  6. (Motivate) If a perpendicular is drawn from the vertex of the right angle of a right triangle to the hypotenuse, the triangles on each side of the perpendicular are similar to the whole triangle and to each other.  7. (Prove) The ratio of the areas of two similar triangles is equal to the ratio of the squares of their corresponding sides.  8. (Prove) In a right triangle, the square on the hypotenuse is equal to the sum of the squares on the other two sides.  9. (Prove) In a triangle, if the square on one side is equal to sum of the squares on the other two sides, the angles opposite to the first side is a right angle. | 10 |