Syllabus

Algebra

- Theory of Quadratic Equation; Arithmetic, Geometric and Harmonic Progression; Permutation and Combination; Binomial and Exponential Theorem and Logarithmic Series.

Elementary Statistics

- Collection of Data; Statistical Regularity and Inertia of Large Numbers; Classification, Tabulation of Data; Presentation of Data by Diagram and Graph; Statistical Average; Dispersion and Skewness; Index Numbers.

CHAPTERS + Time Table

PART 'A'

Mathematics: Algebra

		Time Table
1.	**Arithmetic Progression**	**11 Sept - 15 Sept**
2.	Geometric Progression	**16 Sept - 20 Sept**
3.	Harmonic Progression	**21 Sept - 25 Sept**
4.	Miscellaneous Series	**25 Sept - 30 Sept**
5.	Theory of Quadratic Equation	**1 Oct - 5 Oct**
6.	Miscellaneous Equation	**6 Oct - 10 Oct**
7.	Permutation and Combination	**16 Oct - 20 Oct**
8.	Binomial Theorem (For Positive Integral Index)	**21 Oct - 25 Oct**
9.	Exponential Theorem	**26 Oct - 30 Oct**
10.	Logarithmic Series	**1 Nov - 5 Nov**

PART 'B'

Elementary Statistics

1.	Presentation of Data	**6 Nov - 10 Nov**
2.	Presentation of Data by Diagrams and Graphs	**11 Nov - 15 Nov**
3.	Statistical Measures (Central Tendency)	**16 Nov - 20 Nov**
4.	Dispersion and Skewness	**21 Nov - 25 Nov**
5.	Index Numbers	**25 Nov - 30 Nov**

$(a+b)^2 = a^2+b^2+2ab$

$(a-b)^2 = a^2+b^2-2ab$

$(a+b)^3 = a^3+b^3+3ab(a+b)$

$(a-b)^3 = a^3+b^3-3ab(a-b)$

$(a+b+c)^2 = a^2+b^2+b^2+2ab+2bc+2ca$

$a^2+b^2 = (a+b)(a-b)$

$a^2+b^2 = (a+b)(a-b)$

$ax^2 + qx + c = 0$

$A = p$

$B = q$

$C = r$

$D = 0$

$B^2 - 4AC = 0$

m²+

$\sin^2\theta + \cos^2\theta = 1$

$\cos^2\theta = 1 - \sin^2\theta$

$\cos\theta = \sqrt{1 - \sin^2\theta}$

$\cos^2\theta - \sin^2\theta = (\cos\theta - \sin\theta)(\cos\theta + \sin\theta)$

$\frac{d}{dx}(x^n) = nx^{n-1}$

$\frac{d}{dx}(\sin x) = \cos x$

$$\frac{d}{dx}(x^n) = nx^{n-1}$$

$P(x_1, y_1)$ $Q(x_2, y_2)$

$$PQ = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

If (x_1, y_1) and (x_2, y_2)

$$(x, y) = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

$$y = mx + c$$

$\therefore$

Q. $P(x_1, y_1)$ and $Q(x_2, y_2)$

$$PQ = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

Q. $P(x_1, y_1)$ and $Q(x_2, y_2)$

$$(x, y) = \left(\frac{x_1 + x_2}{2} , \frac{y_1 + y_2}{2} \right)$$

Q. $y = mx + c$

$$\tan\theta = \left| \frac{m_1 + m_2}{1 - m_1 m_2} \right| \longrightarrow$$

Q. $(a+b)^2 = a^2+b^2+2ab$

$a^2+b^2 = a^2+b^2$

$(a-b)^2 = a^2+b^2-2ab$

$(a+b+c)^2 = a^2+b^2+b^2+2ab+2bc+2ca$

$(a+b)^3 = a^3+b^3+3ab(a+b)$

$(a-b)^3 = a^3+b^3-3ab(a-b)$

$(a+b)^2 = a^2+b^2+2ab$

$\sin^2\theta+\cos^2\theta = 1$

$\sec^2\theta-\tan^2\theta = 1$

$(a+b)^2 = a^2+b^2+2ab$

ax^2+bx+c

Q. ax^2+bx^2

Q. $ax^2+bx+c = 0$

$(a+b)^2 = a^2+b^2+2ab$

$(a+b)^3 = a^3+b^3+3ab(a+b)$

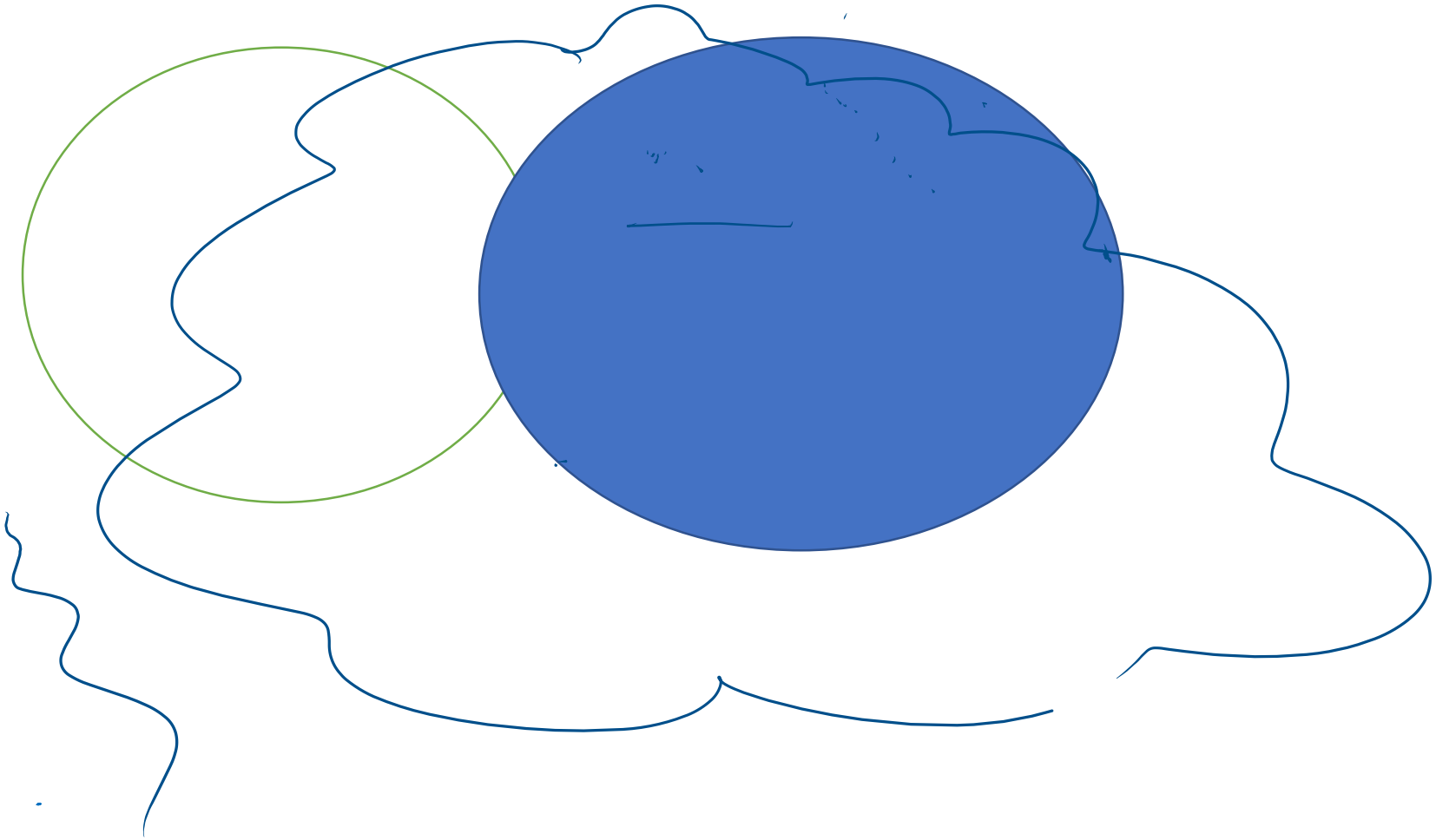
$(a-b)^3 = a^3+b^3-3ab(a-b)$

$(a+b+c)^2 = a^2+b^2+2ab+2bc+2bc$

$a^2-b^2 = (a+b)(a-b)$

$\sin^2\theta+\cos^2\theta = 1$

$\sec^2\theta-\tan^2\theta = 1$



$$x + y = 3$$
$$x - y = 2$$

$$2x = 5$$

$$x = \frac{5}{2}$$

$$x + y = 3$$

$$x + \frac{5}{2} = 3$$

$$x = 3 - \frac{5}{2}$$

$$= \frac{6 - 5}{6}$$

$$x = \frac{1}{6}$$