

NIMCET Topic-Wise Notes (Detailed)

1. MATHEMATICS

Set Theory & Functions

- Definitions of set, subset, power set
- Functions: one-one, onto, bijection
- $n(A \cup B) = n(A) + n(B) - n(A \cap B)$

Algebra

- Quadratic equations and discriminant
- Permutation: $nPr = \frac{n!}{(n-r)!}$
- Combination: $nCr = \frac{n!}{r!(n-r)!}$

Coordinate Geometry

- Distance formula
- Slope, equation of line
- Circle equation: $(x-a)^2 + (y-b)^2 = r^2$

Calculus

- Limit formulas: $\lim_{x \rightarrow 0} \frac{\sin x}{x} = 1$
- Derivatives: $\frac{d(x^n)}{dx} = nx^{n-1}$
- Integration: $\int x^n dx = \frac{x^{n+1}}{n+1}$

Trigonometry

- $\sin^2 x + \cos^2 x = 1$
- Complementary angles

Probability & Statistics

- $P(A) = \frac{n(A)}{n(S)}$
- Bayes theorem basics
- Mean and variance

Vectors

- Dot product and cross product basics

2. LOGICAL REASONING

Number Series

- Patterns: $+n$, xn , Fibonacci

Coding-Decoding

- Letter shifting, pattern recognition

Blood Relations

- Family trees and relational mapping

Direction Sense

- Distance using Pythagoras

Analogy & Syllogism

- Venn diagram based conclusions

3. COMPUTER AWARENESS

Basics of Computer

- Input, process, output
- RAM vs ROM

Number System

- Binary, Decimal, Conversions

C Programming

- Data types, loops, arrays, pointers

Operating System

- Process scheduling (FCFS, SJF, RR)

Networking

- LAN, WAN, HTTP, IP address

4. ENGLISH

Vocabulary

- Synonyms, Antonyms, One-word substitutions

Grammar

- Tenses, SVA, Active/Passive

Reading Comprehension

- Keyword-based solving

Sentence Correction

- Grammar and punctuation errors