

- Arithmetical questions up to 10<sup>th</sup> standard
- Calculation of fraction, percentages, square root etc.
- Profit & Loss and Interest calculations
- Data/Table analysis, Graph & Bar Diagram and Pie Chart analysis
- Questions related to common use of science (Physics & Chemistry)
- Health & Nutrition

**(C) General Knowledge:**

- Current affairs / Events (Political, Social, Cultural & Economics)
- Historical events
- Geography including Tourist Places/Spots
- Current affairs relating to Business & Trade
- Countries & Currencies
- Latest Who's Who?
- Sports & Games

**(D) English Language:**

- Word Meanings
- Antonyms & Synonyms
- Meaning of Phrases & Idioms
- Fill in the blanks
- Complete / Improvement of the sentences with correct use of Pronouns, Verbs, Adverbs & Adjectives
- Reading comprehension's followed by questions

**PAPER – 5 (APTITUDE TEST FOR LATERAL ENTRY IN ENGINEERING (B.SC. GRADUATES) / LATERAL ENTRY IN 2<sup>nd</sup> Year MCA )**

**Part 1: Mathematics**

**Algebra:** Sets relations & functions, De-Morgan's Law, Mapping Inverse relations, Equivalence relations, Peano's axioms, Definition of rationals and integers through equivalence relation, Indices and surds, Solutions of simultaneous and quadratic equations, A.P., G.P. and H.P., Special sums i.e.  $\sum n^2$  and  $\sum n^3$  ( $n \in \mathbb{N}$ ), Partial fraction, Binomial theorem for any index, exponential series, Logarithm and Logarithmic series. Determinants and their use in solving simultaneous linear equations, Matrices, Algebra of matrices, Inverse of a matrix, Use of matrix for solving equations.

**Probability:** Definition, Dependent and independent events, Numerical problem on addition and multiplication, theorem of probability.

**Trigonometry:** Identities, Trigonometric equations, properties of triangles, solution of triangles, heights and distances, Inverse function, Complex numbers and their properties, Cube roots of unity, De-Moivre's theorem.

**Co-ordinate Geometry:** Pair of straight lines, Circles, General equation of second degree, parabola, ellipse and hyperbola, tracing of conics.

**Calculus:** Limits & continuity of functions, Differentiation of function of function, tangents & normal, Simple examples of Maxima & Minima, Indeterminate forms, Integration of function by parts, by substitution and by partial fraction, definite integral, application to volumes and surfaces of frustums of sphere, cone and cylinder. Differential equations of first order and of first degree.

**Vectors:** Algebra of vectors, scalar and vector products of two and three vectors and their applications.

**Dynamics:** Velocity, composition of velocity, relative velocity, acceleration, composition of accelerations, Motion under gravity, Projectiles, Laws of motion, Principles of conservation of momentum and energy, direct impact of smooth bodies.

**Statics:** Composition of coplanar, concurrent and parallel forces moments and couples resultant of set of coplanar forces and condition of equilibrium, determination of centroid in simple cases, Problems involving friction.

### **Part 2: Computer Concepts**

**Computer Basics:** Organization of computer, Central Processing unit (CPU), Structure of instructions in CPU, Input/ Output devices, Computer memory, Memory organization,

**Data Representation-:** Representation of characters, Integers, Binary and hexadecimal representation, Binary arithmetic – addition, subtraction, division, multiplication, signed arithmetic and two's complement arithmetic. Floating point representation of numbers, normalized floating point representation, Boolean algebra, truth tables, Venn diagrams

**Data Structures-** Arrays, lists, stacks, queues

**Computer Architecture:** Block structure of computers, Communication between processor and I/O devices, Interrupts

**Computer Language:-** Assembly language and high level language, Computer programming in C

### **Operating System Basics**

## **PAPER – 6 (APTITUDE TEST FOR MBA/ MCA)**

The test is aimed at evaluating the verbal ability, quantitative aptitude, logical & abstract reasoning and knowledge of current affairs. The following is a brief description of contents of the test paper.

**Section A (English Language):** Grammar, vocabulary, uncommon words, sentence completion, synonyms, antonyms, relationship between words & phrases and comprehension of passages.

**Section B (Numerical Aptitude):** Numerical calculation, arithmetic, simple algebra, geometry and trigonometry, Interpretation of graphs, charts and tables.

**Section C (Thinking and Decision Making):** Creative thinking, unfamiliar relationships, verbal reasoning, finding patterns trends and Assessment of figures & diagrams.

**Section D (General Awareness):** Knowledge of current affairs and other issues related to trade, industry, economy, sports, culture and science.

## **PAPER – 7 (APTITUDE TEST FOR DIPLOMA HOLDERS IN PHARMACY)**

1. Pharmaceutics-I
2. Pharmaceutical Chemistry -I
3. Pharmacognosy
4. Biochemistry and Clinical Pathology
5. Human Anatomy and Physiology
6. Health Education & Community Pharmacy
7. Pharmaceutics -II
8. Pharmaceutical Chemistry -II
9. Pharmacology and Toxicology
10. Pharmaceutical Jurisprudence
11. Drug Store and Business management
12. Hospital and Clinical Pharmacy