Syllabus for SNGUCET

School of Pharmacy and Technology Management (PCB)
Bachelor of Pharmacy / Bachelor of Pharmacy + Master of Business Administration (Pharma. Tech)

Physics:
Vectors, Error Analysis, Motion in a Plane, Laws of Motion, Gravitation, Thermal Properties of Matter, Sound, Optics, Electrostatics, Semiconductors, Circular Motion, Rotational Motion, Oscillations, Gravitation, Elasticity, Electrostatics, Wave Motion, Magnetism, Surface Tension, Wave Theory of Light, Stationary Waves, Kinetic Theory of Gases and Radiation, Interference and Diffraction, Current Electricity, Magnetic Effects of Electric Current, Electromagnetic Induction, Electrons and Photons, Atoms, Molecules, and Nuclei, Semiconductors, Communication Systems.

Chemistry:
Some Basic Concepts of Chemistry, Structure of Atom, Chemical Bonding, Redox Reactions, Elements of Group 1 and 2, States of Matter (Gaseous and Liquids), Adsorption and Colloids (Surface Chemistry), Hydrocarbons, Basic Principles of Organic Chemistry, Chemistry in Everyday Life, Solid State, Chemical Thermodynamics and Energetics, Electrochemistry, General Principles and Processes of Isolation, Solutions and Colligative Properties, p-Block Elements, Group 15 Elements, d and f Block Elements, Chemical Kinetics, Coordination Compounds, Halogen Derivatives of Alkanes and Arenes, Aldehydes, Ketones, and Carboxylic Acids, Organic Compounds Containing Nitrogen, Alcohols, Phenols, and Ethers, Polymers, Chemistry in Everyday Life, Biomolecules (Carbohydrates).

Botany:
Genetics and Evolution: Genetic Basis of Inheritance, Gene: its nature, expression and regulation, **Biotechnology and its application:** Biotechnology: Process and Application, **Biology and Human Welfare:** Enhancement in Food Production, Microbes in Human Welfare, **Plant Physiology:** Photosynthesis, Respiration, **Reproduction in Organisms:** Reproduction in Plant, **Ecology and Environment:** Organisms and Environment -I: Habitat and Niche.

Zoology:
Genetics and Evolution: Origin and the Evolution of Life, Chromosomal Basis of Inheritance, **Biotechnology and its application:** Genetic Engineering and Genomics, **Biology and Human Welfare:** Human Health and Diseases, Animal Husbandry, **Human Physiology:** Circulation, Excretion and osmoregulation, Control and Co-ordination, **Reproduction in Organisms:** Human Reproduction, **Ecology and Environment:** Organisms and Environment-II

School of Technology Management and Engineering (PCM)
Bachelor of Technology

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Mathematics:
Trigonometric II, Straight Line, Circle Probability, Complex Numbers, Permutations and Combinations, Functions, Limits, Continuity, Conic Section,Trigonometric Functions, Straight Lines and Circles, Probability, Complex Numbers, Permutations and Combinations, Functions and Limits, Continuity and Differentiability, Integration, Differential Equations, Vectors and Three-Dimensional, Geometry, Linear Programming.

Master of Computer Applications

Mathematics and Statistics: The questions will cover the following topics of high school mathematics (up to the12th Standard)**Algebra:** Fundamental operations in Algebra, Expansion, factorization, Quadratic equations, indices, logarithms, arithmetic, geometric and harmonic progressions, binomial theorem, permutations andcombinations. **Co-ordinate Geometry:** Rectangular Cartesian co-ordinates, equations of a line, mid- point, intersections etc., equations of a circle, distance formulae, pair of straight lines, parabola, ellipse and hyperbola, simple geometric transformations such as translation, rotation, scaling. **Differential Equations:** Differential equations of first order and their solutions, linear differential equations with constant coefficients, homogenous linear differential equations. **Trigonometry:** Simple identities, trigonometric equations, properties of triangles, solution of triangles, height and distance, inverse function. **Probability and Statistics:** Basic concepts of probability theory, Averages, Dependent and independent events, frequency distributions, and measures of dispersions, skewness and kurtosis, random variable and distribution. Functions, mathematical expectations, Binomial, Poisson, normal distributions, curve fitting, and principle of least squares, correlation and regression. • Arithmetic: Ratios and proportions, problems on time-work, distance speed, percentage, etc. **Basic Set Theory and Functions:** Set, relations and mappings. **Mensuration:** areas, triangles and quadrilaterals, area and circumference of circles, volumes and surface areas of simple solids such as cubes, spheres, cylinders and cones.

Logical/ Abstract Reasoning: This shall include the questions to measures how quickly and logically you can think. This section will cover logical situations and questions based on the facts given in the passage. This test shall check the problem solving capability of the candidate.

English comprehension and verbal ability: Questions in this section will be designed to test the candidate's general understanding of the English language. There will be questions on the topics such as Basic English grammar, vocabulary, comprehension, synonyms antonyms, sentence correction, word & phrases, jumbled paragraph.

Computer Concepts:Computer Basics: Organization of a computer, Central Processing Unit (CPU), Structure of instructions in CPU, input / output devices, computer memory, memory organization, back-up devices. **Data Representation:** Representation of characters, integers, and fractions, binary and hexadecimal representations, **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. **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

School of Commerce
Bachelor of Computer Applications / Bachelor of Business Administration

English Language:

Reading comprehension includes passages with questions based on their contents, grammar, vocabulary, sentence completion, synonyms, antonyms, comprehension of passages etc., choice of appropriate words, expressions and similar language skills, etc.

Reasoning (Verbal and Arithmetic):

This will include questions to measure how quickly and logically the candidates can think.

Will cover logical situations and questions based on facts given in the passage. This test will check the problem-solving capability of the candidate.

General Knowledge & Awareness:

Questions will include current national and international affairs, culture, trade and commerce, sports, and scientific inventions and discoveries.

Computer Basics:

Organization of a computer, Central Processing Unit (CPU), Structure of instructions in CPU, input/output devices, computer memory, memory organization, backup devices, System software and application software, basics of internet.