

B. Pharma (142)

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## Doctor Harisingh Gour Vishwavidyalaya, Sagar (M.P.), India

Syllabus for B. Pharm Entrance Exam-2020-21

The B. Pharm entrance examination, 2020-21 will be based on the following syllabus. Candidates are required to have 12<sup>th</sup> (H.S.S.C.) standard level knowledge of subjects as per prescribed syllabus.

### Physics


Physical world and measurement, Notion of Potential Energy, Nature of Physical Laws, Kinematics, Speed, Velocity, Work, Energy and Power, Laws of Motion, Static & Kinetic Friction, Motion of System of Particles and Rigid Body, Gravitation, Kepler's law of Planetary Motion, The Universal Law of Gravitation, Thermodynamics, Behaviour of Perfect Gas and Kinetic Theory, Properties of Bulk Matter, Bulk Modulus, Critical Velocity, Heat, Work & Internal Energy, Oscillations and Waves.

Electrostatics, Electric Charges & their Conservation, Electric Dipole, Magnetic Effects of Current and Magnetism, Carbon Resistors, Kirchhoff's Laws & Simple Applications, Electromagnetic Induction and Alternating Currents, AC Generator & Transformer, Concept of Magnetic Field, Permanent Magnets, Current Electricity, Electromagnetic Waves, Electromagnetic Spectrum, Dual Nature of Matter and Radiation, Optics, Optical Instruments, Wave Optics, Atoms and Nuclei, Electronic Devices, Conductors.

### Chemistry

Basic Concepts of Chemistry, Laws of Chemical Combination, Structure of Atom, Atomic Number, Isotopes & Isobars, Chemical Bonding and Molecular Structure, Ionic Bond, Covalent Bond, States of Matter: Gases and Liquids, Thermodynamics, Classification of Elements and Periodicity in Properties, Electronegativity, Equilibrium, Equilibrium in Physical & Chemical Process, Redox Reactions, Hydrogen, Physical & Chemical Properties of Water, s-Block Element (Alkali and Alkaline earth metals), Organic Chemistry-Some Basic Principles and Techniques, Some p-Block Elements, Hydrocarbons, Environmental Chemistry.

Solid State, Band Theory of Metals, Solutions, Elevation of Boiling Point, Electro Chemistry, Chemical Kinetics, Surface Chemistry, General Principles and Processes of Isolation of Elements, Electrochemistry, p-Block Elements, d and f Block Elements, Haloalkanes and



PROFESSOR

PHYSICS

DOCTOR HARISINGH GOUR VISHWAVIDYALAYA

SAGAR (M.P.)

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Haloarenes, Alcohols, Physical & Chemical Properties of Primary Alcohol, Phenols and Ethers, Coordination Compounds, Aldehydes, Ketones and Carboxylic Acids, Organic Compounds Containing Nitrogen, Amines, Cynaides & Isocynaides, Polymers, Biomolecules, Chemistry in Everyday Life, Cleansing Agents – Soaps & Detergents.

## Biology

Diversity in Living World, Three Domains of Life, Cell Structure and Function, Cell Theory, Plant Cell & Animal Cell, Structural Organisation in Animals and Plants, Tissues, Morphology & Modifications, Plant Physiology, Transport in Plants, Photosynthesis, Human physiology.

Reproduction, Reproduction in Organisms, Biology and Human Welfare, Genetics and Evolution, Heredity & Variations, Biology and Human Welfare, Biotechnology and Its Applications, Principle & Process of Biotechnology, Ecology and Environment, Organism & Environment, Biodiversity and its Conservation.

## Mathematics

### • Algebra

Algebra of complex numbers, addition, multiplication, conjugation, polar representation, properties of modulus and principal argument, triangle inequality, cube roots of unity, geometric interpretations. Quadratic equations with real coefficients, relations between roots and coefficients. Arithmetic, geometric and harmonic progressions, sums of squares and cubes of the first  $n$  natural numbers. Logarithms and their properties. Matrices as a rectangular array of real numbers, equality of matrices, multiplication by a scalar and product of matrices. Addition and multiplication rules of probability, conditional probability, Bayes Theorem, computation of probability of events using permutations and combinations.

### • Trigonometric

Trigonometric functions, their periodicity and graphs, addition and subtraction formulae, formulae involving multiple and sub-multiple angles, general solution of trigonometric equations.

### • Analytical Geometry

Relations between sides and angles of a triangle, sine rule, cosine rule, half-angle formula and the area of a triangle, inverse trigonometric functions (principal value only).

  
Signature