## 10 COURSE.

## First Year. (Scientific Class.)

## BRANCHES.

(1. Civil Engineering-2. Mines and metallurgy-3. Mechanics and the working of metals-4. Diverse industries. Productions.)

ARITHMETIC: Review of the metrical system, complex numbers, extraction of square and cube roots. Arithmetical and Geometrical Progressions. Calculation of logarithms.

ALGEBRA : Review of examination matters. Powers and roots. Quadratics. Arithmetical, Geometrical, and Harmonical Progressions. Permutations and combinations.

DESCRIPTIVE GEOMETRY: The first six Books of Legendre. Definitions. Circle and measurement of angles. Use of the table of chords. Proportion of figures. Properties of different lines: perpendicular, parallel, chord, tangent, secant, arc, construction of scales. Construction of diagrams. Properties of the right-angled triangle. Regular polygons and measurement of the circle. Evaluation of surfaces. Equivalent figures. Plane and solid angles. Polyhedrons. Elements of surveying and levelling; measurement of heights and surfaces. Projections. Graphical and numerical Problems.

GEOGRAPHY AND GEOLOGY: Physical Geography of the earth. Meteorology and Climatology. Notions of descriptive geology. Stratum of different soils.

NATURAL HISTORY: Division of beings. Comparative anatomy. Classification of animals. Character of each class, species, &.

BOTANY : Flora and Fauna of different continents.

NATURAL PHILOSOPHY: Elementary notions. General properties. Elementary calculations. Attraction. Hydrostatics. Gas. Elements of Acoustics. Caloric. Conductibility: radiation. Light. Static electricity.

ELEMENTS OF MECHANICS: Forces, motion. Resultant power. Equilibrium. Gravity. Lever. Scales, and dynamometers. Pendulum. Inclined plane and pulleys.

CHEMISTRY: Elementary notions. Classification and formulas. Metals and metalloids. Organic Chemistry.

LINEAR and ornamental drawing. Architectural drawing. Projections of different parts of machines, by means of coloring.

PHILOSOFILY. Literary Compositions.

HISTORY.

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