Chapter LIII to § 737 and examples 1-10. Theory of equations of all degrees. Transformation of equations to others having different roots. Solution of cubic equations by Horner's and other methods. Determinants; Factors by inspection; reduction to a lower order by addition of columns or rows or their multiples; application to solve simple simultaneous equations, and to processes of elimination. Demoivre's Theorem; some of the less difficult applications. (*Todhunter's Plane Trigonometry.*). Chapter XIX, § 266-72; 274-76; 78. Exponential values of sine, cosine, tangent. Gregory's series. Calculation of π. Chapter XXI, omitting § 298 to the end of the chapter. Summation of the series in Chapter XXII, § 303-4; 6-9, and others of the same nature. *Marks*, 250.

Section T.

Geometry with deductions, Co-ordinate Geometry and Conics. Re-examination on, and completion of the former course, (Sections A, B, F, K, O). Abridged Notation (*Todhunter,* Chapter IV.) *Marks*, 250.

Section U.

Differential and Integral Calculus. Re-examination on, and completion of the former course. Easy examples of tracing curves. Elementary notes of the solution of differential equations. Finite differences considered with reference to summing rational algebraical series; interpolation and correction. Summing areas. Weddle's approximation. Method of least squares. *Marks*, 250 or 500.

Section V.

Applied Mechanics. (*Crofton.*) Re-examination on and completion of Section P. (*Statics.*) Moments of Inertia. The elipse of Inertia. Momental ellipsoid. Principal axes. Graphical construction of Moments and Products of Inertia. Amsler's planimeter. Internal stresses in a plane lamina. Principal stresses; direction of pure shearing stress; Ellipse of stress. Internal stress in beams; moment of resistance; general formulæ and application to beams of symmetrical section. Shearing force the differential co-efficient of the bending moment; diagram of shearing force used to determine the bending moment. Distribution of shearing stress; application to girders. Theory of fixed beams; application to a beam fixed at both ends; (1) loaded at the centre; (2) uniformly