Diameters investigated analytically as for parabola (alternative with § 187). Conjugate diameters as the projections of two perpendicular diameters of the auxiliary circle; hence the properties of conjugate diameters and the equation to the ellipse referred to them (instead of § 198).

To construct the foci of an ellipse, given the axes; also to construct directrices and latus rectum.

To construct an ellipse, given a pair of conjugate diameters.

Given an ellipse, to find the centre and axis.

Given either axis and one point, to describe the ellipse.

If any tangent meet two conjugate diameters, the rectangle contained by its segments is equal to the square of the parallel semi-diameter; thence, given a pair of conjugate diameters, to construct the axis.

Hyperbola; Chapters XI, XII, omitting proof of equation referred to conjugate diameters § 252, also § 262,3; 265.

Notes as for the ellipse wherever practicable. Equation and properties deduced from the definition $r - r' = 2a$. Substitution of $-b^2$ for b^2 or $-a^2$ for a^2 in the equation to the ellipse. The same substitution in the case of properties involving b^2; geometrical meaning of the negative sign in each case.

Diameters as for ellipse (alternative with 236).

The conjugate hyperbola. The equation $(a^2y^2 - b^2x^2)^2 = a^4b^4$. The four foci equidistant from the centre.

Equation referred to the asymptotes. Area between the asymptotes (as axes) and the co-ordinates of any point.

General equation of the 2nd degree; Chapter XIII. General acquaintance with the method and results of § 269 to 272. To trace a conic, easy examples only, § 279.

Chapter XIV—General equation to a conic, § 281. Pole and polar, § 289-91. Equation referred to the tangents, § 293-4. Similar curves, 296-8.

Chapter XVI—Section of a cone; a different proof will be given shewing the foci and directrices. Omit § 348-9. An harmonic ratio; the ratios $AB.DC.:AC.DB.AD.BC.$ Harmonic pencil. Omit § 355-61.

Chapter XVII—Projections; § 362-89, and read over the rest.

Marks—December, 500.

SECTION L.—*Differential Calculus* (*Williamson*)

Chapter I—Proof of $d\ (x^n)$ by binomial theorem, instead of § 16-18. Differentials used equally with differential co-efficients. Differential of the function of a function obtained directly without the investigation of § 19. Geometrical condition for $\frac{dx}{dy} \times \frac{dy}{dx} = 1$.

Chapter II—Successive differentiation; differential of the independent variable is constant. Omit § 39-43 to end of chapter. Read over Liebnitz Theorem § 48.

Chapter III—Expansion of functions. "Remainder" noted but not used in applications of Taylor's and Maclaurin's Theorems. Interpretation of remainder to shew that if two points be taken on a curve, the chord joining them is parallel to the tangent at some intermediate point. Expansion of $tan^{-1}x$ by integration. Omit § 65-68. Read over § 73 with equations (27), (28), (29), (33) or Mr. Homersham Cox's variation of Lagrange's proof. Omit § 75 to end of chapter.

Chapter IV—Indeterminate forms; algebraic processes not necessary. Consider also $\infty - \infty$. Read over the proof in § 91.

Chapter V—Partial differentiation, § 95-6. Result only of § 97. Omit § 98, 101. Result only of Euler's Theorem, § 102. Omit § 103. Consider § 104. Omit § 107, also § 110 to the end of the chapter.

Chapter VI—Read over the first two pages and note results.

Chapter VIII—Read over § 127 and note result.

Chapter IX—Maxima and Minima. Omit § 136-7, 143-7, 151-3-4.

Chapter XII—Tangents and normals. Omit § 173-7, 184 to the end of the chapter except definition of inverse curves. Read over § 195.