

MATHEMATICS SYLLABUS FORM 5 (PAPER 2A)

Text books being used: EXTENDED MATHEMATICS FOR IGCSE STP. BOOK 3	
<p>1. Transformations.</p> <p>a. Geometrical constructions of the four main types of transformations USING PENCIL AND PAPER METHOD AND <u>NOT</u> PURELY BY INSPECTION:</p> <p>(i) Translation by a given vector.</p> <p>(ii) Reflection to include reflection in the line $y = \pm x$.</p> <p>(iii) Rotation about a given point restricted to multiples of 90°. Finding the centre and the angle of rotation</p> <p>(iv) Enlargement with positive and negative scale factors. (To include fractional scale factors).</p> <p>b. Combined Transformations of 2- D shape.</p> <p>c. Identify a transformation as a reflection, translation, rotation or enlargement or a combination of basic transformations. The use of appropriate language to describe fully the transformation is expected.</p>	<p>EXTENDED MATHEMATICS FOR IGCSE Chapter: 9</p> <p>.</p>
<p>2. Statistics and Probability.</p> <p>a. Mode, Median, and Mean.</p> <p>b. Drawing of bar- charts, histograms and pie – charts.</p> <p>c. Finding the average and median of grouped and varied –width histograms.</p> <p>d. Cumulative frequency: mean and application.</p> <p>e. Upper and lower quartile values and inter-quartile range.</p> <p>f. Box plots.</p> <p>g. Miscellaneous problems on probability</p>	<p>STP Book 3 Chapter 26.</p> <p>.</p> <p>EXTENDED MATHEMATICS FOR IGCSE Chapter: 10.</p>
<p>3. Variations.</p> <p>a. Direct and indirect variations.</p> <p>b. Relation to graphs.</p> <p>c. Joint variations.</p> <p>d. Applications to experimental data.</p>	<p>EXTENDED MATHEMATICS FOR IGCSE Chapter 5</p>

<p>4. Functions.</p> <p>a. Difference between a relation and a function.</p> <p>b. Inverse function and the drawing of graphs of these functions.</p> <p>c. Composite functions.</p>	<p>EXTENDED MATHEMATICS FOR IGCSE Chapter: 8</p>
<p>5. Ratios and proportions</p>	<p>EXTENDED MATHEMATICS FOR IGCSE Chapter 1</p>
<p>6. Interpreting Travel Graphs</p> <p>a. Gradient of distance /time and speed / time graphs.</p> <p>b. Calculating the distance from a velocity/time graph.</p>	<p>EXTENDED MATHEMATICS FOR IGCSE Chapter: 7</p>
<p>7. Loci.</p> <p>a. Revision of basic geometrical constructions.</p> <p>b. Definition of loci.</p> <p>c. Standard loci in two and three dimensions.</p> <p>d. Use of intersecting loci</p>	<p>STP Book 3 Chapter 24. EXTENDED MATHEMATICS FOR IGCSE Chapter: 4.</p>
<p>8. Sine formula and Cosine formula.</p> <p>a. Application to given experimental data.</p> <p>b. Use of the above formulae in 3-D problems.</p> <p>c. The application of ratios in trigonometry without the use of calculators.</p>	<p>EXTENDED MATHEMATICS FOR IGCSE Chapter: 6</p>
<p>9. Bearings and three-dimensional problems.</p> <p>a. Angle between a line and a plane.</p> <p>b. Angle between planes.</p>	<p>EXTENDED MATHEMATICS FOR IGCSE Chapter 6.</p>
<p>10. Number systems. Rational and irrational numbers.</p>	<p>EXTENDED MATHEMATICS FOR IGCSE Chapter 1.</p>
<p>11. Sequences.</p> <p>a. Patterns.</p> <p>b. Definition of a sequence.</p> <p>c. The n^{th} Term.</p> <p>d. Tessellations.</p>	<p>EXTENDED MATHEMATICS FOR IGCSE Chapters: 1 AND parts of Chapter 11</p>

<p>12a. Solving of Quadratic Equations by trial and improvement method.</p> <p>b. Method of completing the square for solving quadratic equations</p> <p>c. Simultaneous Quadratic equations</p>	<p>STP BK. 3 Parts of Chapter 13. Plus teachers notes</p> <p>Teacher's notes</p> <p>Teacher` notes</p>
<p>13. Graphs.</p> <p>a. Sketching of line graphs of the form $y = mx$ and $Y = mx + c$.</p> <p>b. Sketching of graphs of the form $y = ax^2 + bx + c$ and of cubic functions.</p> <p>c. Revision of the plotting of graphs.</p> <p>d. Use of graphs in the solving of simultaneous and quadratic equations.</p> <p>e. Use of graphs for finding values from experimental data.</p>	<p>EXTENDED MATHEMATICS FOR IGCSE Chapters: 7</p>
<p>14. Formal Geometry.</p>	<p>EXTENDED MATHEMATICS FOR IGCSE Chapters: 4</p>
<p>15. Working out past Examinations Papers.</p>	<p>Sec. Exam. Papers.</p>

ASSESSMENT MARKING SCHEME

Throughout the year revision will be made of topics covered in previous scholastic years, especially in Forms 3 and 4, which are not included in the above syllabus. For more details refer to SEC Mathematics Syllabus.

Students are expected to use ICT software to answer valid questions appropriate to the subject matter being taught. For more detail refer to the SEC Mathematics Syllabus. .

Marks are going to be given for assessment purposes throughout the scholastic year. These marks are going to bases on either of the following:

- (i) The student's ability to answer direct exploratory questions set IN CLASS and their ability to answer them within set time limit.**
- (ii) MENTAL TESTS WORKED OUT IN CLASS.**
- (iii) Computer material set on work sheets and worked out AT SCHOOL in the school computer laboratory**
- (iv) Revision homework set on questions similar to those set in Sec examinations.**