



# **BANGLADESH SCHOOL MUSCAT**

## **YEARLY SYLLABUS-AY( 2024-25)**

**CLASS :XII SCIENCE**

<b>SUBJECTS</b>
<b>PHYSICS -UNIT 4</b>
<b>PHYSICS -UNIT 5</b>
<b>PHYSICS -UNIT 6</b>
<b>CHEMISTRY-UNIT 4</b>
<b>CHEMISTRY-UNIT 5</b>
<b>CHEMISTRY-UNIT 6</b>
<b>BIOLOGY-UNIT 4</b>
<b>BIOLOGY-UNIT 5</b>
<b>BIOLOGY-UNIT 6</b>
<b>MATH-P3</b>
<b>MATH-P4</b>
<b>MATH-M1</b>
<b>ICT-UNIT 3</b>
<b>ICT-UNIT 4</b>

**CLASS: XII****SUBJECT: PHYSICS UNIT 4**

<b>Name of the book</b>	<b>Term 1</b>	<b>Term 2</b>	<b>Term 3</b>
<b>PEARSON EDEXCEL INTERNATIONAL A LEVEL PHYSICS STUDENT BOOK 2 BY-MILES HUDSON</b>	<b>Topic 3 : Further Mechanics</b> 1.Law of conservation of Momentum 2. Types of collisions 3. Circular motion 5.Centripetal Force and acceleration <b>Topic 1: Electric and Magnetic Field</b> 1. Coulomb’s law and Electric fields 2. Electric potential 3. Uniform Electric Field 4. Capacitors and Capacitance 5. Charging and Discharging capacitors 6. Magnetic files and electromagnets 7. Magnetic force 8. Electromagnetic Induction 9. Faraday’s law and Lenz’s law	<b>Topic 2: Particle Physics</b> 1. Particle accelerators 2. Atomic models 3. Fundamental particles 4. Standard model 5. Use of Units such as MeV, GeV and $\text{MeV}/c^2$ and atomic mass unit 6. Applying laws conversion for particle interactions	Revisions and Solving past papers Topic for revision classes 1. Further Mechanics 2. Electric and Magnetic field 3. Particle Physics
<b>Types of Questions and Distribution of Marks</b>	<b>MOCK Test 1 Marks: 45 is converted to 90 Marks</b>  <b>Pattern IAL</b>	<b>Qualifying Exam Marks : 90</b>  <b>Pattern IAL</b>	<b>Revision Test Marks : 90</b>  <b>Pattern IAL</b>

➤ **Syllabus subject to change under unavoidable circumstances**

**CLASS: XII**

**SUBJECT: PHYSICS/UNIT 5 & 6**

Name of the book	Term 1	Term 2	Term 3
<p><b>PEARSON EDEXCEL INTERNATIONAL A LEVEL PHYSICS STUDENT BOOK 2 BY-MILES HUDSON &amp; PEARSON EDEXCEL INTERNATIONAL AS / A LEVEL PHYSICS LAB BOOK</b></p>	<p><b>Thermal Physics</b> Specific Heat Capacity, Specific Latent Heat, Kinetic Theory of Gases <b>Nuclear Decay</b> Background radiation, Types of nuclear radiation-<math>\alpha, \beta, \gamma</math>, Probability and Decay Half-life, Half-life graphs <b>Nuclear fission and fusion</b> Energy-mass equivalence, Binding energy per nucleon, Nuclear fusion, fission Nuclear Reactors Practical <b>Oscillations</b> Simple Harmonic Motion, Angular Velocity, SHM Energy</p>	<p><b>Damped and Forced Oscillations</b> Damped Oscillations, Resonance Resonance problems and Damping solutions, Astrophysics and Cosmology <b>Gravitational fields</b> Gravitational field strength, Electric and gravitational fields <b>Stellar properties</b> The Stefan-Boltzmann Law, Wien's Law Star Classes, Hertzsprung-Russell diagram, Stellar Evolution, Hubble's Law Standard Candles, Doppler Red Shift Practical</p>	<p>REVISION Thermal Energy Solving Question Papers REVISION Nuclear Decay Solving Question Papers REVISION Oscillations Solving Question Papers REVISION Astrophysics and Cosmology Solving Question Papers</p>
<p><b>Types of Questions and Distribution of Marks</b></p>	<p><b>MOCK Exam 1</b> <b>Marks Unit 5: 45 is converted to 90 Marks</b> <b>Unit 6: 25 is converted to 50 Marks</b> <b>Pattern: IAL</b></p>	<p><b>Qualifying Exam</b> <b>Marks Unit 5: 90</b> <b>Unit 6: 50</b> <b>Pattern: IAL</b></p>	<p><b>Revision Test</b> <b>Marks Unit 5: 90</b> <b>Unit 6: 50</b> <b>Pattern: IAL</b></p>

➤ Syllabus subject to change under unavoidable circumstances

**CLASS: XII**

**SUBJECT: CHEMISTRY- UNIT-4**

<b>Name of the book</b>	<b>Term 1</b>	<b>Term 2</b>	<b>Term 3</b>
<b>Pearson Edexcel International A Level Chemistry Student Book 2 By Cliff Curtis, Jason Murgatroyd and David Scott.</b>	<b>Topic:1 Kinetics</b> <b>Topic 2: Entropy and Energetics</b> <ul style="list-style-type: none"><li>• Entropy</li><li>• Lattice Energy</li></ul> <b>Topic 3: Chemical Equilibria</b>	<b>Topic 4: Acid-base Equilibria</b> <b>Topic 5: Carbonyls, Carboxylic Acids and Chirality</b> <ul style="list-style-type: none"><li>• Chirality</li><li>• Carbonyl compounds</li><li>• Carboxylic acid</li><li>• Carboxylic Acids and derivatives</li><li>• Spectroscopy and chromatography</li></ul>	<ul style="list-style-type: none"><li>• Spectroscopy and chromatography</li></ul> Revision Solving Papers from the Question Bank
<b>Distribution of marks</b>	<b><u>Mock 1 Exam</u></b> <b>Unit 4 : 45 is converted to 90 Marks</b> (Questions as per IAL pattern)	<b><u>Qualifying Exam</u></b> <b>Unit 4: 90 marks</b> (Questions as per IAL pattern)	<b><u>Revision Exam</u></b> <b>Unit 4: 90 marks</b> (Questions as per IAL pattern)

➤ Syllabus subject to change under unavoidable circumstances

**CLASS: XII**

**SUBJECT: CHEMISTRY- UNIT-5**

<b>Name of the book</b>	<b>Term 1</b>	<b>Term 2</b>	<b>Term 3</b>
<b>Pearson Edexcel International A Level Chemistry Student Book 2 By Cliff Curtis, Jason Murgatroyd and David Scott.</b>	<b>Topic 1. Redox Equilibria.</b> <ul style="list-style-type: none"><li>• Standard Electrode Potential</li><li>• Redox in action (Titrations)</li></ul> <b>Topic 2. Transition metals and their chemistry</b> <ul style="list-style-type: none"><li>• Principles of transition metal chemistry</li><li>• Transition metal reactions</li></ul>	<b>Topic 3. Organic Chemistry: Arenes</b> <ul style="list-style-type: none"><li>• Arenes: Benzenes</li></ul> <b>Topic 4. Organic nitrogen compounds:</b> <ul style="list-style-type: none"><li>• Amines, Amides, Amino acids and proteins.</li><li>• Analysis of some inorganic and organic unknowns.</li></ul>	<b>Topic 5. Organic synthesis</b> <ul style="list-style-type: none"><li>• Organic structures.</li></ul> <b>Revision</b> <b>Solving Papers from the Question Bank</b>
<b>Distribution of marks</b>	<b><u>Mock 1 Exam</u></b> <b>Unit 5 : 45 is converted to 90 Marks</b> (Questions as per IAL pattern)	<b><u>Qualifying Exam</u></b> <b>Unit 5: 90 marks</b> (Questions as per IAL pattern)	<b><u>Revision Exam</u></b> <b>Unit 5: 90 marks</b> (Questions as per IAL pattern)

➤ **Syllabus subject to change under unavoidable circumstances**

**CLASS: XII**

**SUBJECT: CHEMISTRY- UNIT-6**

<b>Name of the book</b>	<b>Term 1</b>	<b>Term 2</b>	<b>Term 3</b>
<b>Pearson Edexcel International A Level Chemistry Student Book 2 By Cliff Curtis, Jason Murgatroyd and David Scott.</b>	<b>Practicals:</b> 1. Following the rate of the iodine-propanone reaction by a titrimetric method and investigating a 'clock reaction' (Harcourt-Esson, iodine clock). 2. Investigating some electrochemical cells. Carry out redox titrations with both: i iron(II) ions and potassium manganate(VII) ii sodium thiosulfate and iodine 3. The preparation of a transition metal complex.	<b>Practicals:</b> 1. Analysis of some inorganic and organic unknowns. i carry out some of the reactions of amines ii prepare an azo dye iii carry out reactions of amino acids iv prepare nylon-6.6 2. The preparation of aspirin. 3. Analysis of some inorganic and organic unknowns	<b>Revision Solving Papers from the Question Bank</b>
<b>Distribution of marks</b>	<b><u>Mock 1 Exam</u></b> Unit 6 : 25 is converted to 50 Marks (Questions as per IAL pattern)	<b><u>Qualifying Exam</u></b> Unit 6: 50 marks (Questions as per IAL pattern)	<b><u>Revision Exam</u></b> Unit 6: 50 marks (Questions as per IAL pattern)

➤ **Syllabus subject to change under unavoidable circumstances**

Name of the book	Term 1	Term 2	Term 1
1. Pearson Edexcel International A Level Biology - Student Book 2  2. Lab book  3. IAL Biology Revision Guide  4. IAL Biology Question Bank	<p><b>Topic 5A :</b> Photosynthesis</p> <p><b>Topic 5B:</b> Ecology</p> <p><b>Topic 5C:</b> Environment and Climate</p> <p>Topic wise revision IAL Question Papers Assignments Presentation</p>	<p><b>Topic 6A :</b> Microbiology</p> <p><b>Topic 6B:</b> Immunity</p> <p><b>Topic -6C :</b> Decomposition and Forensics</p> <p><b>Full specification of IAL Unit 4</b></p> <p>Topic wise revision IAL Question Papers Assignments Presentation</p>	<p><b>Full specification of IAL Unit 4</b></p> <p>Topic wise revision IAL Question Papers</p>
<p><b>Distribution of marks</b></p>	<p><b>Mock Test I : As per IAL Scheme</b> <b>Unit 4 : 45 is converted to 90 Marks</b></p>	<p><b>Qualifying Exam : As per IAL Scheme</b> <b>Unit 4 : 90</b></p>	<p><b>Mock Test II : As per IAL Scheme</b> <b>Unit 4 : 90</b></p>

➤ **Syllabus subject to change under unavoidable circumstances**

**YEAR: XII**

**SUBJECT: BIOLOGY (UNIT 5)**

<b>Name of the book</b>	<b>Term 1</b>	<b>Term 2</b>	<b>Third term</b>
1. Pearson Edexcel International A Level Biology - Student Book 2 2. Lab book 3. IAL Biology Revision Guide 4. IAL Biology Question Bank	<b>Topic 7A :</b> Cellular Respiration <b>Topic 7B:</b> Muscles, Movement, and the Heart <b>Topic 7C:</b> Control of the Internal Environment  Topic wise revision IAL Question Papers	<b>Topic 8A :</b> The nervous system and neurones <b>Topic 8B:</b> Coordination in Animals and Plants <b>Topic 8C :</b> Gene Technology  <b>Full specification of IAL Unit 5</b>  Topic wise revision IAL Question Papers	<b>Full specification of IAL Unit 5</b>  Topic wise revision IAL Question Papers
<b>Distribution of marks</b>	<b>Mock Test I : As per IAL Scheme</b> <b>Unit 5:45 is converted to 90 Marks</b>	<b>Qualifying Exam : As per IAL Scheme</b> <b>Unit 5 : 90</b>	<b>Mock Test II : As per IAL Scheme</b> <b>Unit 5 : 90</b>

➤ Syllabus subject to change under unavoidable circumstances



YEAR: XII

SUBJECT: BIOLOGY (UNIT 6)

Name of the book	Term 1	Term 2	Term 3
<p>1. Pearson Edexcel International A Level Biology - Student Book 2</p> <p>2. Lab book</p> <p>3. IAL Biology Revision Guide</p> <p>4. IAL Biology Question Bank</p>	<p><b>Core practical-1:</b></p> <ul style="list-style-type: none"><li>Investigate the effects of light intensity, light wavelength, temperature and availability of carbon dioxide on the rate of photosynthesis using a suitable aquatic plant.</li></ul> <p><b>Core practical-2:</b></p> <ul style="list-style-type: none"><li>Carry out a study of the ecology of a habitat, such as using quadrats and transects to determine the distribution and abundance of organisms, and measuring abiotic factors appropriate to the habitat.</li></ul> <p><b>Core practical-3:</b></p> <ul style="list-style-type: none"><li>Investigate the effects of temperature on the development of organisms (such as seedling growth rate or brine shrimp hatch rates),</li></ul>	<p><b>Core practical-5:</b></p> <ul style="list-style-type: none"><li>Investigate the effect of different antibiotics on bacteria.</li></ul> <p><b>Core practical-6:</b></p> <ul style="list-style-type: none"><li>Use an artificial hydrogen carrier (redox indicator) to investigate respiration in yeast.</li></ul> <p><b>Core practical-7:</b></p> <ul style="list-style-type: none"><li>Use a simple respirometer to determine the rate of respiration and RQ of a suitable material (such as germinating seeds or small invertebrates).</li></ul> <p><b>Core practical-8:</b></p> <ul style="list-style-type: none"><li>Investigate the effects of exercise on tidal volume, breathing rate, respiratory minute ventilation, and oxygen consumption using data from spirometer traces.</li></ul>	<p><b>Core practical-10:</b></p> <ul style="list-style-type: none"><li>Investigate the production of amylase in germinating cereal grains..</li></ul> <p><b>Statistical test:</b></p> <ul style="list-style-type: none"><li>Correlation</li><li>Mann Whitney test</li><li>Plan an investigation</li><li>Standard deviation</li><li>T-test</li></ul> <p>Topic wise revision</p> <p>IAL Question Papers</p>

	<p>taking into account the ethical use of organisms.</p> <p><b>Core practical-4:</b></p> <ul style="list-style-type: none"> <li>Investigate the growth rate of microorganisms in a liquid culture, taking into account the safe and ethical use of organisms.</li> </ul> <p><b>Statistical test:</b></p> <ul style="list-style-type: none"> <li>Correlation</li> <li>Standard deviation</li> <li>T-test</li> <li>Plan an investigation</li> </ul> <p><b>Practical activities included in units 4 &amp; 5</b></p> <p>Topic wise revision</p> <p>IAL Question Papers</p>	<p><b>Core practical-9:</b></p> <ul style="list-style-type: none"> <li>Investigate habituation to a stimulus.</li> </ul> <p><b>Statistical test:</b></p> <ul style="list-style-type: none"> <li>Wilcoxon Formula</li> <li>Mann Whitney test</li> <li>Plan an investigation</li> </ul> <p><b>Practical activities included in units 4 &amp; 5</b></p> <p><b>Full specification of IAL Unit 6</b></p> <p>Topic wise revision</p> <p>IAL Question Papers</p>	
<b>Distribution of marks</b>	<p><b>Mock Test I: As per IAL Scheme</b></p> <p><b>Unit 6: 25 is converted to 50 Marks</b></p>	<p><b>Qualifying Exam:As per IAL Scheme</b></p> <p><b>Unit 6: 50</b></p>	<p><b>Mock Test II : As per IAL Scheme</b></p> <p><b>Unit 6: 50</b></p>

➤ **Syllabus subject to change under unavoidable circumstances**

**CLASS: CLASS XII SCIENCE**

**SUBJECT: PURE MATH P3**

Name of the book	Mock Examination 1	Qualifying Examination	Mock 2 Examination
<p><b>Pearson Edexcel International A Level Pure Mathematics 3 Student book</b></p> <p><b>Joe Skrakowski and Harry Smith</b></p>	<p><b>Chapter 1: Algebraic Methods</b></p> <p><b>Chapter 2: Functions and Graphs.</b> The modulus function, Composite functions, Inverse functions, combining transformations and solving modulus functions.</p> <p><b>Chapter 3: Trigonometric functions,</b> Inverse trigonometric functions.</p> <p><b>Chapter 4: Trigonometric Addition</b> Formulae, double angle formulae, Proving identities.</p> <p><b>Chapter 6: Differentiation of</b> Chain rule, Product rule and Quotient rule.</p> <p><b>Chapter 7: Integration.</b> Trigonometric functions, Reverse chain rule.</p> <p><b>Practice: IAL QP.</b></p>	<p><b>Chapter 5: Exponentials and Logarithm.</b></p> <p><b>Chapter 8: Numerical Methods.</b> Location of roots and fixed point Iteration.</p> <p><b>IAL MATH P3 FULL SYLLABUS</b></p> <p><b>Revision: IAL QP</b></p>	<p><b>IAL MATH P3 FULL SYLLABUS</b></p> <p><b>REVISION from IAL QP</b></p>
<p><b>Types of questions and distribution of Marks</b></p>	<p><b>Mock Exam-1</b> <b>(As per IAL Scheme)</b> <b>Marks - 50 is converted to 75 Marks</b></p>	<p><b>Qualifying Examination</b> <b>Marks - 75</b> <b>(As per IAL Specifications)</b></p>	<p><b>Mock Exam-2</b> <b>Marks - 75</b> <b>(As per IAL Specifications)</b></p>

➤ Syllabus subject to change under unavoidable circumstances

**CLASS: XII SCIENCE****SUBJECT: PURE MATHEMATICS P4**

<b>Name of the book</b>	<b>MOCK 1 EXAMINATION</b>	<b>QUALIFYING EXAMINATION</b>	<b>MOCK 2 EXAMINATION</b>
Edexcel International A Level Mathematics Pure 4 Student Book  ISBN: 9781292245126	<p><b>Chapter 1: Proof</b> - Proof by contradiction.</p> <p><b>Chapter 2: Partial Fractions.</b> Repeated factors and Improper fractions.</p> <p><b>Chapter 3: Coordinate Geometry</b> – Parametric equations, using trigonometric identities and curve sketching.</p> <p><b>Chapter 4: Binomial Expansion</b> of rational powers.</p> <p><b>Chapter 5: Differentiation</b> of parametric equation, Implicit function and Rate of change.</p> <p><b>Chapter 6: Integration.</b> Area under curve, Volume of rotation about x-axis, Integration by substitution and by parts, Solving differential equations.</p>	<p><b>Chapter 7: Vectors.</b></p> <ul style="list-style-type: none"> <li>• <b>Revision full IAL P4 syllabus.</b></li> <li>• <b>Practice from IAL Question Papers.</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Practice from IAL Question Papers. Full P4 Syllabus</b></li> </ul>
<b>Types of questions and distribution of Marks</b>	<b>Mock Exam - 1 Marks - 50 is converted to 75 Marks</b>	<b>Qualifying Examination Marks - 75 (As per IAL Specifications)</b>	<b>Mock Exam - 2 Marks - 75 (As per IAL Specifications)</b>

➤ **Syllabus subject to change under unavoidable circumstances.**

**CLASS: XII SCIENCE**

**SUBJECT: MECHANICS M1**

<b>Name of the book</b>	<b>Mock 1 Examination.</b>	<b>Qualifying Examination.</b>	<b>Mock 2 Examination.</b>
<b>PEARSON EDEXCEL INTERNATIONAL A LEVEL MECHANICS 1 Student Book.</b>	<b>Chapter 1: Mathematical models in Mechanics. Chapter 2: Constant Acceleration. Chapter 3: Vectors in Mechanics. Chapter 4: Dynamics of a Particle. Chapter 5: Forces and Friction. Chapter 6: Impulse and Momentum. Chapter 7: Statics of a particle.  Practice IAL QP</b>	<b>Chapter 8: Moments.  Practice IAL M1 QP FULL IAL M1 SYLLABUS</b>	<b>FULL IAL M1 SYLLABUS  IAL M1 QP.</b>
<b>Types of questions and distribution of Marks</b>	<b>Mock Exam - 1 Marks - 50 is converted to 75 Marks</b>	<b>Qualifying Examination Marks - 75 (As per IAL Specifications)</b>	<b>Mock Exam - 2 Marks - 75 (As per IAL Specifications)</b>

➤ **Syllabus subject to change under unavoidable circumstances**

**CLASS:**

**SUBJECT: ICT-IT UNIT 3**

<b>Name of the book</b>	<b>Term 1</b>	<b>Term 2</b>	<b>Term 3</b>
Edexcel International A Level IT Teacher Resource Pack <b>(ONLINE RESOURCES)</b>	<p><b>Topic 1: Manipulating data</b> Deals with data. How it is collected, stored and manipulated. Access to database software would be useful but students will need to be able to draw their diagrams.</p> <p><b>Topic 2: Enabling technologies</b> Deals with the technologies which may be used when setting up or interacting with a system. Some of the technology, such as user interfaces, is likely to be familiar to students, but all of it is under constant development.</p>	<p><b>Topic 3: Using IT systems in organisations</b> It is probable that many students will have some experience of IT systems, even if it is only a school network. Their experiences may form a useful starting point for some topics but it is important that they realise that many organisations, and their systems, are much larger and more complex than anything they may have experienced themselves.</p> <p><b>Topic 4: Systems development</b> Deals with project management techniques. The Waterfall and Agile approaches are looked at in detail but the management tools included are suitable for most other project management methods as well.</p>	<p><b>Topic 5: Emerging technologies</b> This topic covers several fast-developing areas of IT. Students are likely to have some experience of the technologies, particularly in the realms of personal entertainment and their own mobile devices. This experience may make a good starting point but it is essential that students look at bigger systems and new applications of the technology as well.</p>
<b>Types of Questions and Distribution of marks</b>	<b>Mock Test 1</b> <b>Written exam(2 Hrs):80 Marks</b> <b>[IAL pattern]</b> <b>( Internal Assessment)</b>	<b>Qualifying Exam</b> <b>Written exam(2 Hrs):80 Marks</b> <b>[IAL pattern]</b> <b>( Internal Assessment)</b>	<b>Mock Test 2</b> <b>Written exam(2 Hrs):80 Marks</b> <b>[IAL pattern]</b> <b>( Internal Assessment)</b>

➤ **Syllabus subject to change under unavoidable circumstances**

**CLASS: XII**

**SUBJECT: ICT-IT UNIT 4**

<b>Name of the book</b>	<b>Term 1</b>	<b>Term 2</b>	<b>Term 3</b>
Edexcel International A Level IT Teacher Resource Pack <b>(ONLINE RESOURCES)</b>	<b>1.Database applications</b> Understand why database software is used to hold and manipulate data.  <b><u>User needs</u></b> Be able to analyse the needs of users in a range of contexts.  <b><u>User experience</u></b> Understand how the characteristics of the user affect aspects of the database design  <b>Topic 2: Relational database concepts</b>  <b><u>Structuring data</u></b>  Be able to construct and amend relational databases	<b>Topic 2: Relational database concepts (contd)</b> Be able to evaluate the appropriateness and effectiveness of a data structure in relation to the requirements of given scenario. Understand the need for and function of relational data structures. Understand the need to ensure that stored data is suitable for processing and the methods used to achieve it  <b>Topic 3: Database solutions</b> <b><u>Using database software</u></b>  Be able to update, insert, modify and delete data. Be able to create relational data structures to handle given data sets.	<b>Topic 3: Database solutions(contd)</b> Be able to import data from external sources, Be able to export data to external sources. Be able to create appropriate system outputs for a database solution that aid users effectively. Understand the need to test that solutions to a problem work as intended and are fit for purpose. Be able to evaluate the effectiveness and appropriateness of a completed solution and identify whether the solution is fit for purpose.  <ul style="list-style-type: none"><li>• Revision</li> <li>• Practice the previous years papers.</li></ul>
<b>Types of Questions and Distribution of marks</b>	<b>Mock Test 1</b> <b>Practical exam(3 Hrs):80 Marks</b> <b>[IAL pattern]</b> <b>( Internal Assessment</b>	<b>Qualifying Exam</b> <b>Practical exam(3 Hrs):80 Marks</b> <b>[IAL pattern]</b> <b>( Internal Assessment</b>	<b>Mock Test 2</b> <b>Practical exam(3 Hrs):80 Marks</b> <b>[IAL pattern]</b> <b>( Internal Assessment</b>

➤ **Syllabus subject to change under unavoidable circumstances**