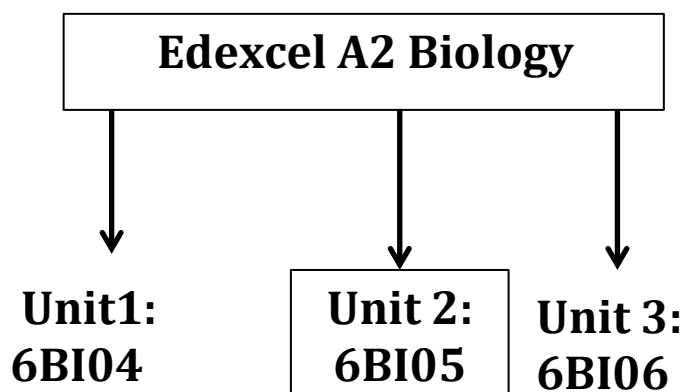
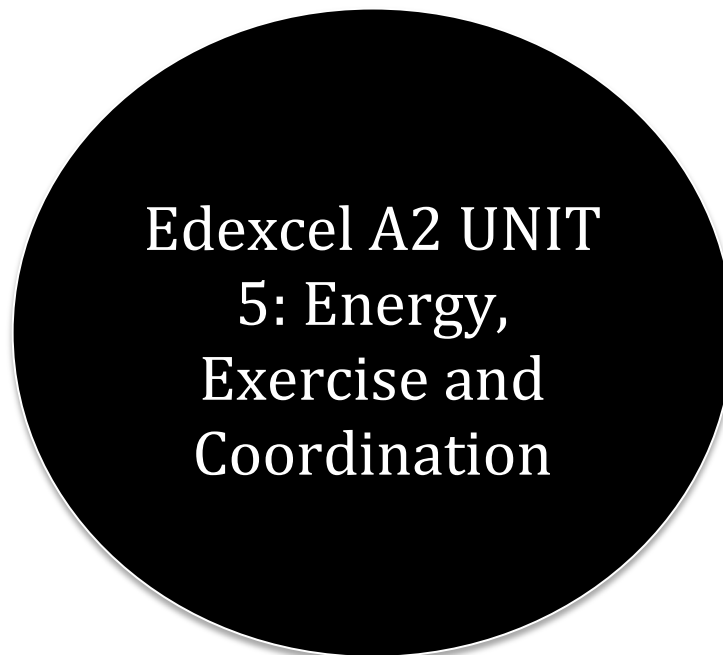


## Edexcel A2 GCE Biology (9BI01)



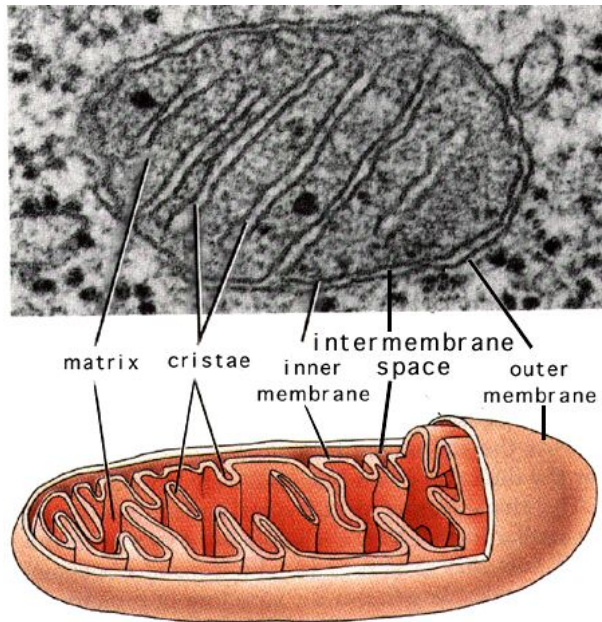
Dr. Faisal Rana  
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Unit 6BI05: Energy, Exercise and Coordination	Paper code 6BI05																																													
1. Exam paper- Energy, Exercise and Coordination 17 <sup>th</sup> June 2015 (morning)	20 % of Advanced GCE Biology																																													
<p style="text-align: center;"><b>Overview of content</b></p> <ul style="list-style-type: none"> <li>• .ATP, glycolysis, anaerobic/aerobic respiration.</li> <li>• Control and functioning of heart; ventilation and cardiac output.</li> <li>• Homeostasis.</li> <li>• The nervous system.</li> <li>• Impact of exercise on body, and improving performance.</li> <li>• Hormonal coordination.</li> <li>• Brain structure and development.</li> <li>• Imbalances in brain chemicals.</li> <li>• Human Genome project.</li> </ul>																																														
<p style="text-align: center;"><b>Overview of assessment</b></p> <ol style="list-style-type: none"> <li>1. The unit is assessed through a 1-hour and 45 min examination paper set and marked by Edexcel.</li> <li>2. The total number of marks is 90 and contains objective questions, short-answered and structured questions.</li> <li>3. Grades A*–E are available.</li> <li>4. Grades assessment by year:</li> </ol> <table border="1" data-bbox="437 1189 1219 1769"> <thead> <tr> <th>Year</th> <th>Raw Marks to 90 % UMS - A*</th> <th>Raw Marks to 80 % UMS grade 'A'</th> </tr> </thead> <tbody> <tr><td>Jan 2009</td><td>-</td><td>-</td></tr> <tr><td>Jun 2009</td><td>-</td><td>-</td></tr> <tr><td>Jan 2010</td><td>-</td><td>59</td></tr> <tr><td>Jun 2010</td><td>63</td><td>58</td></tr> <tr><td>Jan 2011</td><td>58</td><td>54</td></tr> <tr><td>Jun 2011</td><td>60</td><td>56</td></tr> <tr><td>Jan 2012</td><td>67</td><td>62</td></tr> <tr><td>Jun 2012</td><td>63</td><td>58</td></tr> <tr><td>Jan 2013</td><td>67</td><td>63</td></tr> <tr><td>Jun 2013</td><td>61</td><td>56</td></tr> <tr><td>Jun 2013 -R</td><td>67</td><td>62</td></tr> <tr><td>Jun 2014</td><td>75</td><td>69</td></tr> <tr><td>Jun 2014 -R</td><td>77</td><td>71</td></tr> <tr><td>Jun 2015</td><td>?</td><td>?</td></tr> </tbody> </table>		Year	Raw Marks to 90 % UMS - A*	Raw Marks to 80 % UMS grade 'A'	Jan 2009	-	-	Jun 2009	-	-	Jan 2010	-	59	Jun 2010	63	58	Jan 2011	58	54	Jun 2011	60	56	Jan 2012	67	62	Jun 2012	63	58	Jan 2013	67	63	Jun 2013	61	56	Jun 2013 -R	67	62	Jun 2014	75	69	Jun 2014 -R	77	71	Jun 2015	?	?
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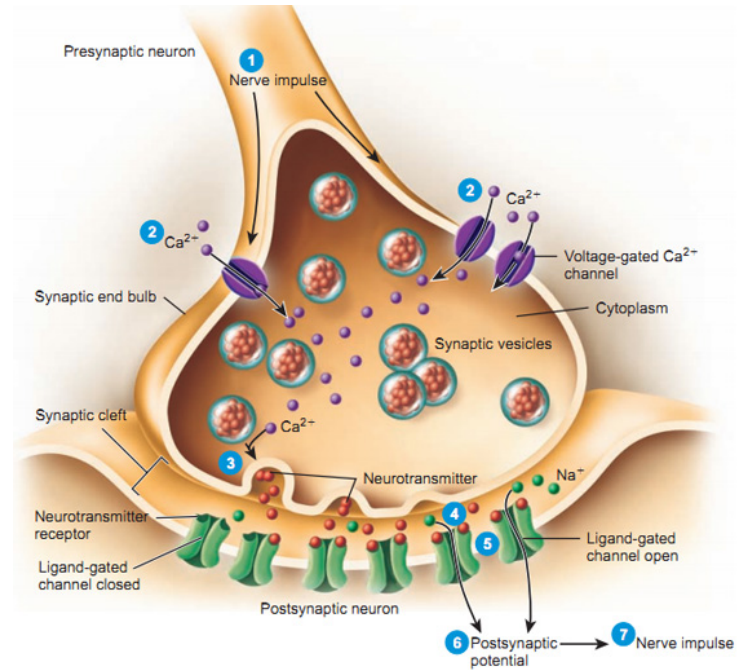
# Edexcel A2 GCE Biology

## A2 unit 6BI05: Energy, Exercise and Coordination

### Module 1: Run for your life



### Module 2: Grey matter



## How BioChem Tuition prepares their students for *6BI05: Energy, Exercise and Coordination?*

BioChem Tuition has a three-pronged strategy to prepare students for grade A or A\*.

1. **Detailed 6BI05 knowledge:** The students will study the specification of Edexcel 6BI05 alongside extensive practice of examination style questions to help them retain the content of the specification. The students will receive detailed F211 notes prepared by BioChem Tuition.

### Key features

- ✓ 6BI05 specification notes.
  - ✓ 6BI05 examination style past examination questions.
  - ✓ 1-2-1 help in understanding the key examiner points.
  - ✓ Revision notes and charts to aid revision.
2. **Practice Edexcel past examination papers (1995-2014):** The students will complete at least 14 years of Edexcel past exam papers. BioChem Tuition will provide all the past papers in printed form to the students. Candidates are required to complete past papers, which are checked and marked in light of the official examiner report and mark scheme. Any mistakes will be followed up to ensure the mistakes are not repeated. The students will be shown how to maximise their marks by following our exam technique and also methods to improve comprehension for scientific questions.

### Key features

- ✓ 14 years of past examination papers practice.
  - ✓ 1-2-1 help in understanding the exam technique.
  - ✓ Revisit the mistakes and practice relevant questions to ensure the mistakes are not repeated.
  - ✓ Past paper practice can be extended by solving 6BI05 style questions from AQA, CIE and OCR exam boards.
3. **Mock examination practice:** Mock 6BI05 examination practice to give student feedback on the likely grade achievable in the exams.

### Key features

- ✓ Mock examination practice to simulate exam experience, which will be marked, graded and feedback on mistakes provided.

**How To Achieve Grade 'A' or 'A\*'**  
**6BI05: Energy, Exercise and Coordination**

<b>Intensive tutoring</b>	<b>Past papers practice (1995-2014)</b>	<b>Mock examination practice</b>
<b>1. Cover 6BI05 Specification</b> <b>2. Practice examination style questions</b>	<b>1. Solve 6BI05 past papers.</b> <b>2. Revisit the mistakes/revise topics</b>	<b>1. Solve mock examination papers to prepare for the exam</b>

## 6BI05 Tuition Plan

<b>Tuition Plan for 6BI05: Energy, Exercise and Coordination</b>	
<b>Stage 1: Specification Topics</b>	<b>Tuition time</b>
<b>Module 1: <i>Run for your life</i></b>	<b>16 hours</b>
<ul style="list-style-type: none"> <li>• Structure of a muscle fibre and difference between fast and slow t muscle fibers.</li> <li>• Sliding filament theory including the role of actin, myosin, troponin, tropomyosin, ATP and ATPase.</li> <li>• Muscles, tendons, the skeleton and ligaments and extensors and flexors.</li> <li>• Aerobic respiration and practical investigation of respiration.</li> <li>• ATP synthesis, aerobic and anaerobic respiration in mammals in yeast.</li> <li>• The control of activity of the heart.</li> <li>• Respirometer and the effect of exercise on the tidal volume and breathing rate-using data from spirometer traces.</li> <li>• Negative feedback loop, homeostasis, and maintaining dynamic equilibrium.</li> <li>• Switching genes on or off by DNA transcription factors including hormones.</li> <li>• Analyze the possible disadvantages of exercise too much and of exercise too little.</li> <li>• Keyhole surgery and knee joint replacement.</li> <li>• Ethical issues of using performance-enhancing drugs by athletes.</li> </ul>	<b>8 hour</b>
<ul style="list-style-type: none"> <li>• Practice of past examination style questions on <b>Run for your life.</b></li> </ul>	<b>8 hours</b>

<b>Module 2: Grey matter</b>	<b>18 hours</b>
<ul style="list-style-type: none"> <li>• Plants detect light using photoreceptors and how they respond to environmental cues.</li> <li>• Describe the structure and function of sensory, relay and motor neurons including the role of Schwann cells and myelination.</li> <li>• Conduction of nerve impulse along an axon including the permeability of sodium and potassium ions and the role of nodes of ranvier.</li> <li>• The eye structure and function.</li> <li>• The nervous control of the eyes.</li> <li>• Compare the nervous and hormonal coordination in animals.</li> <li>• Brain structure and function.</li> <li>• Use of MRI, fMRI and CT scans in medical diagnosis and investigating brain structure and function.</li> <li>• Visual capacities and development of critical window.</li> <li>• Role of animal models in the development of human brain and function including Wiesel's experiments with monkeys and kittens.</li> <li>• The methods that contribute to brain development.</li> <li>• Habituation and investigation of habituation.</li> <li>• Ethics of animal research.</li> <li>• The imbalance of naturally occurring chemicals in brain leading to impairment of its function.</li> <li>• Human genome project and development of new drugs.</li> <li>• Development of drugs using genetically modified organisms.</li> </ul>	<b>8 hours</b>
Practice of past examination style questions on <b>Grey Matter</b>	<b>10 hours</b>

<b>Stage 2: Past paper practice</b>	<b>10 hours</b>
<ul style="list-style-type: none"><li>• Practice of past examination papers from 1995 to 2014 relevant to <b>6BI05: Energy, Exercise and Coordination.</b><ul style="list-style-type: none"><li>✓ 14 years of past examination papers practice.</li><li>✓ 1-2-1 help in understanding the exam technique.</li><li>✓ Revisit the mistakes and practice relevant questions to ensure the mistakes are not repeated.</li><li>✓ Past paper practice can be extended by solving 6CH05 style questions from other exam boards such as AQA, CIE and OCR.</li></ul></li></ul>	<b>10 hours</b>