

Guidance on the use of past paper questions for Advanced Higher Engineering Science

The Curriculum for Excellence Advanced Higher Courses draw on the strengths of popular areas of study from existing Advanced Higher with the introduction of some new content. The purpose of this support document is to help centres and departments to identify suitable past paper questions/items that could be used, or possibly amended, to support learners in their preparation for sitting question papers (exams) as part of the Advanced Higher Course assessment. The advice in this document reflects questions selected from **Advanced Higher Technological Studies 2010 to 2014** [past papers](#).

When utilising any past paper questions, you need to take into account the following:

- ◆ You must select questions that provide the learners with the same level of challenge as those in the Advanced Higher Specimen Question Paper.
- ◆ You may be able to use questions as published or with amendments as suggested in the columns below.
- ◆ You must use questions that adhere to the Advanced Higher General Marking Principles and reflect the form of Detailed Marking Instructions as published in the Advanced Higher Specimen Question Paper.

If any change to a question/items is necessary, you must ensure that:

- ◆ The style and structure matches the Specimen Question Paper for Advanced Higher.
- ◆ Marking of the learner's response to the question adheres to the General Marking Principles in the Advanced Higher Specimen Question Paper.
- ◆ Marking Instructions are amended to reflect the style of the Advanced Higher Detailed Marking Instructions.

The details below should be read in conjunction with the relevant:

Mandatory documentation:

- ◆ Course Specification
- ◆ Unit Specifications
- ◆ Course Assessment Specification

Advice and guidance:

- ◆ Course and Unit Support Notes

Assessment:

- ◆ Question Paper Component:
 - general assessment information
 - general marking principles and detailed marking instructions

Related Information as provided in the relevant N5-Advanced Higher Course Comparison Document.

Key for the section below:

- C — amend context as required
- S — amend source as required
- St — amend question style
- Str — amend structure of the question

Not all topic/areas of study will appear every year due to the sampling techniques used in producing question papers.

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| <p>Information from the Course Assessment Specification The question paper will consist of structured questions, and will give learners an opportunity to demonstrate application of knowledge and understanding to answer appropriately challenging context-based questions by drawing on and applying knowledge from the table provided in the 'Further mandatory information on Course coverage' section.</p> | <p>The columns below identify additional support questions from Advanced Higher Technological Studies Past Papers (2010 to 2014)</p> | | |
| | <p>Advanced Higher Technological Studies</p> | | |
| | Use question as published | Amend question context/source | Amend question style/structure |
| <p>Course Themes</p> | | | |
| The Systems Approach | 2014 Q7(a) , 2013 Q1(a)(i),(ii) 2010 Q2(a)(i),(ii) | | |
| Energy and Efficiency | There are no suitable questions in previous Technological Studies papers. | | |
| <p>Engineering Project management</p> | | | |
| Engineering Roles and Disciplines | These are new topics for which there are no suitable questions in previous Technological Studies papers. | | |
| Impacts of Engineering | | | |
| <p>Electronics and Control</p> | | | |
| Analogue electronics | 2014 Q1,Q10 (c)-(g) 2013 Q8,Q9(b),Q10(b) 2012 Q9(a),(b),(d),Q11(a) 2011 Q1(a),Q3 2010 Q1(b),Q8(d)-(f) | 2010 Q1(b) Alter context so that sequential logic blocks do not appear in any diagram | |
| Digital electronic control systems | 2014 Q9(a) 2013 Q9(c) 2012 Q1 2011 Q7(e),(f) 2010 Q7, Q10(a),(b),(c) | 2010 Q3 Below the table add, 'After four steps the operating sequence of the coils repeats.' Then reword. 'The stepper motor turns through 7.5 each time it steps.' (Stepper motor is not required learning.) | 2014 Q2, Q8(a),(b), 9(c) 2013 Q9(a),Q11(a),(b) 2012 Q5,Q9(e),Q10(a),(b) 2011 Q2,Q6,Q8(a)-(c) 2010 Q3,Q9(d) Rewritten to be solved in either PBasic or Arduino-based "C". |

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| Generation and transmission | This is a new topic for which there are no suitable questions in previous Technological Studies papers. | | |
| Mechanisms and Structures | | | |
| Drive systems | This is a new topic for which there are no suitable questions in previous Technological Studies papers. | | |
| Structures and forces | 2014 Q3 2013 Q(7) 2012 Q8,Q10(c)-(e) 2011 Q4 2010 Q5,Q8(a) | | |
| Materials | 2014 Q5,Q8(c),(d) 2013 Q2,Q10(d) 2012 Q2 2011 Q7(a)-(d) 2010 Q8(b),(c) | | |
| Resources | | | |
| SQA past papers www.sqa.org.uk/pastpapers/findpastpaper.htm | Additional assessment support material is available here: Education Scotland www.educationscotland.gov.uk/ Glow www.educationscotland.gov.uk/usingglowandict/ Glow Log-in https://secure.glowscotland.org.uk/login/login.htm | | |