

GCSE



Chief Examiner's Report Technology and Design

Summer Series 2018



Foreword

This booklet outlines the performance of candidates in all aspects of CCEA's General Certificate of Secondary Education (GCSE) in Technology and Design for this series.

CCEA hopes that the Chief Examiner's and/or Principal Moderator's report(s) will be viewed as a helpful and constructive medium to further support teachers and the learning process.

This booklet forms part of the suite of support materials for the specification. Further materials are available from the specification's microsite on our website at www.ccea.org.uk.

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GCSE TECHNOLOGY AND DESIGN

Chief Examiner's Report

Assessment Unit 1: Technology and Design Core Content

General Remarks

This year saw the first examination of the new specification for the GCSE in Technology and Design. Only Unit 1 was offered this year but the full suite of papers will be offered from 2019 onwards.

Unit 1

All the entries in 2018 for Unit 1 were from Year 11 pupils. The total number of entries was 2424.

The paper contained ten questions and the total mark available was 100. Candidates were expected to complete all 10 questions. The time allowed to complete this paper was 1 hour and 30 minutes. The quality of written communication was examined in Question 10. Careful reading of the questions should be emphasized to candidates.

When answering flowchart questions candidates should be reminded that only generic flowcharts should be produced and only the flowchart symbols that appear in Appendix 3 of the new specification should be used. See 1.39 of the new specification.

Examiners report that the level of language used in the paper was appropriate and that most candidates were able to attempt the range of questions. They also found that there was no evidence to suggest that candidates had insufficient time to complete the paper.

Unit 1 Questions

- Q1**
- (a) This question was deemed to be a good introductory question to the paper. It was generally very well answered by the majority of candidate but in some cases the sketch of the knife follower was very poor. Almost all candidates were able to score marks here. Candidates need to be familiar with and use the symbols and names in Appendix 3 of the new Specification. Correct terminology needs to be used.
 - (b) Well answered by the majority of candidates although some poor flowchart symbols were drawn.
 - (c) Well answered by a majority of candidates but a number of candidates confused the terminal in Part (ii) with those of a transistor.
- Q2**
- (a) The vast minority of candidates were able to identify beech as a hardwood.
 - (b) Candidates responses were varied and ranged from excellent to poor. A number of candidates gave general advantages of CAD rather than focusing on testing. In a number of cases responses were vague or limited to one word. This question asked for reasons to be given and single word responses were generally deemed insufficient to warrant an acceptable answer.
 - (c) Generally well answered by a majority of candidates who could reflect on the instructions and summarise them into the key points and stages. In number of responses the stages were placed out of order or key words were missing. In a minority of cases candidates were unable to summarise adequately.

- (d)** Generally well answered by candidates who focused on marking out and drilling as required by the question. A surprising number of candidates failed to make any use of the key dimensions given in the drawing and quite a number of candidates demonstrated a lack of understanding of the correct use of tools. Many stated that a centre punch be used to mark the hole for drilling.
- Q3 (a)** The majority of candidates were able to provide correct answers here.
- (b)** This was also well answered by many candidates but a surprising number of other candidates produced incorrect solutions or made no response.
- (c)** Mixed responses to this question. A number of candidates were able to provide at least one or two acceptable answers but only the more able candidates were able to provide three acceptable answers. Many answers demonstrated a lack of knowledge of how gear and pulley systems differ or are set up. Vague unclear single word responses were stated by some candidates.
- Q4 (a)** The vast majority of candidates responded well here.
- (b)** A number of candidates were able to provide correct responses here but a lack of understanding of pneumatic control was demonstrated by a many other candidates who were unable to identify the correct valves from the given list.
- (c)** Well answered by a number of candidates but many candidates described safety precautions when using a pneumatic circuit rather than building one.
- Q5 (a) (i)** Most candidates were able to identify all five tools correctly but in a number of other cases the centre punch and the scribe were confused, but most candidates were able to score some marks here.
- (ii)** A number of candidates understood the purpose of a countersink bit and provided a full or part correct response. It was also evident that many other candidates had no idea of its purpose.
- (b) (i)** Some good responses but in a number of cases candidates who stated one advantage struggled for a second answer. Cheaper was often given in spite of the question stating 'Other than cost'.
- (ii)** This part of the question was generally well answered by most candidates but in a number of cases reference was made to aluminium or aluminium alloy but not to both.
- Q6 (a)** This was a straightforward question. Although a number of candidates provided the correct responses a surprising number of candidates answered incorrectly or only provided one correct response.
- (b) (i)** Well answered by the majority of candidates.
- (ii)** A whole range of responses from excellent to very poor. Some candidates failed to mention the switch and others did not the outline the correct function of the LDR but most candidates were able to score some marks.
- Q7** There was a number of excellent or very good responses to this flowchart question with many candidates scoring full or high marks. In such cases the layout was good with very neat flowchart symbols containing clear and precise instructions. Weaker candidates often produced untidy flowcharts that proved difficult to read or follow with confused lengthy instructions. Flowchart symbols must be clear.
- Poor responses failed to indicate the direction of the motor, did not switch the motor off or simply said 'off', did not indicate if the LED or buzzer was on or off, did not give clear wait commands or generally contained incomplete or poor instructions. Candidates should be reminded that only generic flowcharts should be produced and

only the flowchart symbols that appear in Appendix 3 of the new specification should be used when answering flowchart questions. See 1.39 of the new specification.

- Q8 (a)** A majority of candidates were able to identify the pear shaped cam in Fig. 12.
- (b) (i)** A majority of candidates were able to identify the eccentric cam in Fig.13.
- (ii)** Most candidates were able to correctly identify point A as a fulcrum or pivot point but in a number of other cases no response was given.
- (iii)** Mixed responses here. Only the more able students were able to recognize that this was a class 3 lever. Some weaker candidates did not respond to this question.
- (iv) and (v)** Both questions proved to be a challenge for the majority of candidates and only a minority of candidates were able to offer one or two suitable reasons and solutions to the problem.
- Q9 (a) (i)** Generally very well answered.
- (ii)** Generally very well answered.
- (iii)** Although answered correctly by a number of candidates many others responded by stating the type of logic used rather than focusing on why the two valves were included.
- (b) (i)** A number of acceptable answers given but many candidates were unable to suggest two appropriate features for selecting component D. A number of candidates often gave vague single word answers.
- (ii)** Generally very well answered.
- (c)** A number of very good responses, but in a number of cases candidates did not the outstroke of the cylinder.
- Q10** Candidates need to be reminded that QWC is an important aspect of this question therefore care is needed in sentence structure, readability, spelling and grammar as well as the content of the question. A number of candidates made a good attempt at this question but others demonstrated a lack of understanding of the processes, especially brazing, or failed to include relevant safety precautions as required. Some candidates did not attempt this question or produced very poor responses. Only the more able or better informed candidates were able to achieve marks in the higher band. The lack of basic knowledge of the brazing process was evident in very many responses but others could refer to the use of flux, brazing rods, fire bricks, high temperature and allowing the joint to cool slowly. Many candidates were able to describe the marking out process and made good use of the given information but many others made little or no reference to the measurements given and simple made general reference to marking out. Candidates should be encouraged to integrate appropriate safety precautions in the body of the text rather than giving a list of general safety precautions.

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