

Electronics task form

GCSE Electronics

Component 3 - Extended system design and realisation task

Centre Number:	Centre Name:
Candidate number:	Candidate name:

Task Focus	
Teacher's signature:	Date:

Notice to candidate

The work you submit for assessment must be your own.
 If you copy from someone else, allow another candidate to copy from you, or if you cheat in any other way, you may be disqualified from at least the subject concerned.

Candidate declaration

I have read and understood the Notice to candidate (above). I have produced the attached work without assistance other than that which my teacher has explained is acceptable within the specification.

Candidate's signature:	Date:
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Teacher declaration

I confirm that:

- any assistance that goes beyond general guidance has been recorded and taken into account when marking the work;
- otherwise apart from general guidance given within the parameters set out in the specification, the work was solely that of the candidate;
- the work was conducted under the conditions laid out by the specification.

Teacher's signature:	Date:
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Details of additional assistance given

Record here details of any assistance given which goes beyond general guidance and to be taken into account when the work is marked (continue on separate sheet if necessary). You must indicate where you have taken into account the additional assistance provided via annotations.

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Extended system design and realisation task

1. System planning		Mark awarded
3 - 4 marks	<p>The candidate has provided:</p> <ul style="list-style-type: none"> • a clear statement of a problem which includes relevant analysis • a design specification in both qualitative and quantitative terms (typically at least 3 of each), and including 2 or more detailed realistic measurable parameters 	
1 - 2 marks	<p>The candidate has provided:</p> <ul style="list-style-type: none"> • a statement of a problem which includes some superficial analysis • a design specification in qualitative and/or quantitative terms (typically at least 4 in total) 	
0 marks	Response not creditworthy or not attempted.	

2. System Development		Mark awarded
11-15 marks	<p>The candidate has developed the system as a series of sub-systems and has:</p> <ul style="list-style-type: none"> • given a comprehensive specification and provided most circuit details for 5 or more different sub-systems • set up and produced comprehensive tests on prototypes for 5 or more different sub-systems • presented accurate, high-quality fully labelled sub-system circuit diagrams • recorded all relevant results of testing for 5 or more different sub-systems • produced a comprehensive report of the performance of 5 or more different sub-systems 	
6 - 10 marks	<p>The candidate has developed the system as a series of sub-systems and has:</p> <ul style="list-style-type: none"> • given an adequate specification and provided some circuit details for 3 or more different sub-systems • set up and produced appropriate tests on prototypes for 3 or more different sub-systems • presented accurate, good quality and mostly fully labelled sub-system circuit diagrams • recorded results with minor omissions of testing for 3 or more different sub-systems • produced an adequate report of the performance of 3 or more different sub-systems 	
1 - 5 marks	<p>The candidate has developed the system as a series of sub-systems and has:</p> <ul style="list-style-type: none"> • given a simple specification, and provided limited circuit details for 2 or more different sub-systems • set up and produced simple tests on prototypes which were partially completed for 2 or more different sub-systems • presented accurate sub-system circuit diagrams which were not fully labelled or lacked clarity • recorded incomplete results of testing for 2 or more different sub-systems • produced a simplistic report of the performance of 2 or more different sub-systems 	
0 marks	Response not creditworthy or not attempted.	

3. System Realisation		Mark awarded
11 - 15 marks	<p>The candidate has:</p> <ul style="list-style-type: none"> • produced accurate, high-quality labelled block and circuit diagrams for the complete system and provided a complete component list • planned and produced a very well organised physical circuit layout with wires arranged vertically/horizontally and has shown good awareness of risk assessment/safe working procedures • made most wire connections and mounted most components to a high standard • tested the complete hardwired system prototype and provided a detailed analysis of the results using standard scientific convention which included at least two relevant electrical measurements • produced an electronic system in which 3 or more different sub-systems worked consistently and reliably, and included a comprehensive user guide 	
6 - 10 marks	<p>The candidate has:</p> <ul style="list-style-type: none"> • produced accurate, good quality labelled block and circuit diagrams for the system • produced a quite well organised/planned physical circuit layout and shown some awareness of risk assessment/safe working procedures • made some wire connections and mounted some components to a good standard • tested the complete hardwired system prototype and provided an adequate analysis of the results which included at least one relevant electrical measurement • produced an electronic system in which 3 or more different sub-systems worked correctly most of the time and included a basic user guide 	
1 - 5 marks	<p>The candidate has:</p> <ul style="list-style-type: none"> • produced accurate block and circuit diagrams for the system which were not completely labelled or lacked clarity • produced a physical circuit layout with little evidence of organisation/planning and shown superficial awareness of risk assessment/safe working procedures • made some wire connections or mounted some components to a basic standard • tested the complete hardwired system prototype and provided a minimal analysis of the results • produced an electronic system in which 2 or more different sub-systems worked correctly at some time 	
0 marks	Response not creditworthy or not attempted	

4. Evaluation (QER)		Mark awarded
5 - 6 marks	<p>The candidate has:</p> <ul style="list-style-type: none"> provided a critical and objective evaluation of how the system works in terms of the function of each block, which was well structured and made good references to the signal transfer between blocks undertaken a critical and objective evaluation of the performance of the complete system which was valid in all respects, made comprehensive comparisons with the design specification and made at least 2 suggestions for improvement with explanations of how they improve the system <p><i>There is a sustained line of reasoning which is coherent, substantiated and logically structured. The information included in the response is relevant to the argument.</i></p>	
3 - 4 marks	<p>The candidate has:</p> <ul style="list-style-type: none"> provided an objective evaluation of how the system works in terms of the function of each block, which was quite well structured and made some reference to the signal transfer between blocks undertaken an objective evaluation of the performance of the complete system which was valid in most respects, made some comparisons with the design specification and made at least 2 suggestions for improvement <p><i>There is a line of reasoning which is partially coherent, supported by some evidence and with some structure. Mainly relevant information is included in the response but there may be some minor errors or the inclusion of some information not relevant to the argument.</i></p>	
1 - 2 marks	<p>The candidate has:</p> <ul style="list-style-type: none"> provided a simple evaluation of how the system works in terms of the function of each block, in which some of the content may be ambiguous or disorganised undertaken a simple evaluation of the performance of the complete system which was valid in few respects, made minimal comparison with the design specification and made at least 1 superficial suggestion for improvement <p><i>There is a basic line of reasoning which is not coherent, supported by limited evidence and with very little structure. There may be significant errors or the inclusion of information not relevant to the argument.</i></p>	
0 marks	Response not creditworthy or not attempted	

Total mark

40