

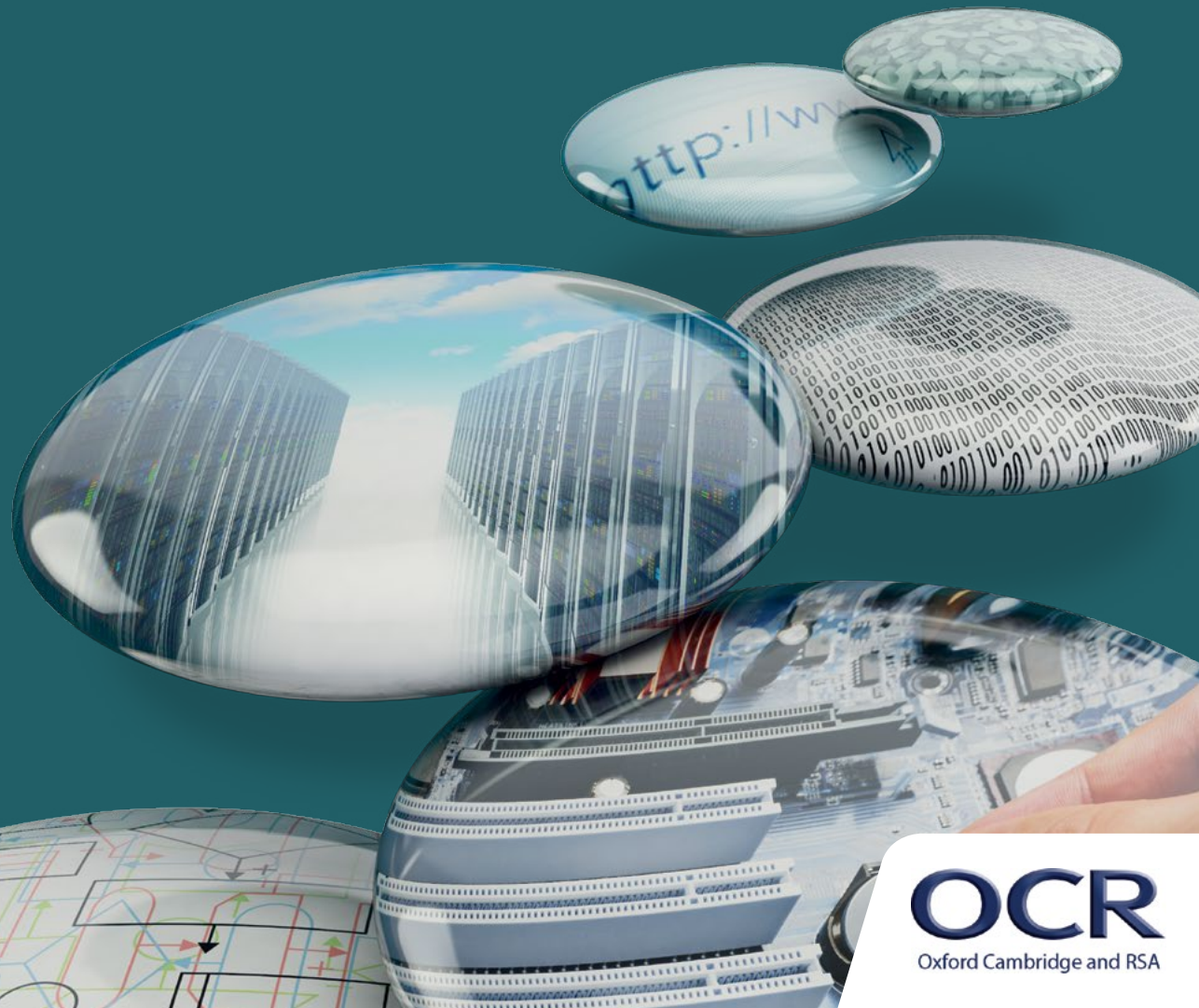
# AS and A LEVEL

H046/H446

# COMPUTER SCIENCE

Theme: Extended Writing Framework

July 2015



We will inform centres about any changes to the specification. We will also publish changes on our website. The latest version of our specification will always be the one on our website ([www.ocr.org.uk](http://www.ocr.org.uk)) and this may differ from printed versions.

Copyright © 2015 OCR. All rights reserved.

#### Copyright

OCR retains the copyright on all its publications, including the specifications. However, registered centres for OCR are permitted to copy material from this specification booklet for their own internal use.

Oxford Cambridge and RSA Examinations is a Company Limited by Guarantee. Registered in England. Registered company number 3484466.

Registered office: 1 Hills Road  
Cambridge  
CB1 2EU

OCR is an exempt charity.

# Contents

Extended Writing Framework .....	3
Suggested starting points for discussion: .....	5
Marking the questions.....	5
Level of Response Questions (extended writing) .....	8



# Extended Writing Framework

Pick a news article or topic and dissect it using the following framework. This should form the base of a reasonable LOR answer. Use this as a brief plan for an extended 9-12 mark question (~ 1 side of writing).

<p><b>Stakeholder:</b></p> <ul style="list-style-type: none"> <li>• Anybody involved either directly or indirectly</li> <li>• How are they effected and to what extent?</li> <li>• Who is financially involved?</li> <li>• Does it affect the public/private sector?</li> </ul>	<p><b>Technology involved:</b></p> <ul style="list-style-type: none"> <li>• Any technology and how it relates to the problem/topic</li> <li>• Different technologies that are related</li> <li>• How the technology works within the context</li> <li>• Comparisons</li> </ul>
<p><b>Moral/Social/Cultural/Legal Issues:</b></p> <ul style="list-style-type: none"> <li>• How the issue relates to any moral, social or cultural context</li> <li>• What are the legal issues?</li> <li>• How are the stakeholders affected?</li> <li>• How does the technology relate?</li> <li>• Is the technology helping or causing a problem, for whom and to what extent?</li> </ul>	<p><b>Solutions:</b></p> <ul style="list-style-type: none"> <li>• Have you answered the question?</li> <li>• Any technological or other solution, and how it solves the problem</li> <li>• Analysis of the solution and its effects on stakeholders</li> <li>• How it all fits together</li> </ul>



## Suggested starting points for discussion:

UK broadband services still patchy, Ofcom reveals - <http://www.bbc.co.uk/news/technology-30375854>

Old laptop batteries could power slums, IBM says - <http://www.bbc.co.uk/news/technology-30345221>

Sony's PlayStation hit by hack attack - <http://www.bbc.co.uk/news/technology-30373686>

Driverless cars set to be tested in four English cities - <http://www.bbc.co.uk/news/technology-30316458>

Check out the OCR\_ICT twitter feed for more up to date areas to discuss using this framework: [https://twitter.com/ocr\\_ict](https://twitter.com/ocr_ict)

## Marking the questions

These types of questions are best marked using the level of response (LOR) mark scheme. The indicative content indicates the expected parameters for candidates' answers, but be prepared to recognise and credit unexpected approaches where they show relevance. Using 'best-fit', decide first which set of **band descriptors** best describes the overall quality of the answer. Once the band is located, adjust the mark concentrating on features of the answer which make it stronger or weaker following the guidelines for refinement.

- Highest mark: If clear evidence of all the qualities in the band descriptors is shown, the **highest** Mark should be awarded.
- Lowest mark: If the answer shows the candidate to be borderline (ie they have achieved all the qualities of the bands below and show limited evidence of meeting the criteria of the band in question) the **lowest** mark should be awarded.
- Middle mark: This mark should be used for candidates who are secure in the band. They are not 'borderline' but they have only achieved some of the qualities in the band descriptors.

Be prepared to use the full range of marks. Do not reserve (eg) high Band 3 marks 'in case' something turns up of a quality you have not yet seen. If an answer gives clear evidence of the qualities described in the band descriptors, reward appropriately.



	AO 1	AO 2	AO 3
<b>High (thorough)</b>	Precision in the use of question terminology. Knowledge shown is consistent and well-developed. Clear appreciation of the question from a range of perspectives making extensive use of acquired knowledge and understanding.	Knowledge and understanding shown is consistently applied to context enabling a logical and sustained argument to develop. Examples used enhance rather than detract from response.	Concerted effort is made to consider all aspects of a system/problem or weigh up both sides to an argument before forming an overall conclusion. Judgements made are based on appropriate and concise arguments that have been developed in response resulting in them being both supported and realistic.
<b>Middle (reasonable)</b>	Awareness of the meaning of the terms in the question. Knowledge is sound and effectively demonstrated. Demands of question understood although at times opportunities to make use of acquired knowledge and understanding not always taken.	Knowledge and understanding applied to context. Whilst clear evidence that an argument builds and develops through response there are times when opportunities are missed to use an example or relate an aspect of knowledge or understanding to the context provided.	There is a reasonable attempt to reach a conclusion considering aspects of a system/problem or weighing up both sides of an argument. However the impact of the conclusion is often lessened by a lack of supported judgements which accompany it. This inability to build on and develop lines of argument as developed in the response can detract from the overall quality of the response.
<b>Low (basic)</b>	Confusion and inability to deconstruct terminology as used in the question. Knowledge partial and superficial. Focus on question narrow and often one-dimensional.	Inability to apply knowledge and understanding in any sustained way to context resulting in tenuous and unsupported statements being made. Examples if used are for the most part irrelevant and unsubstantiated.	Little or no attempt to prioritise or weigh up factors during course of answer. Conclusion is often dislocated from response and any judgements lack substance due in part to the basic level of argument that has been demonstrated throughout response.



<b>Assessment Objectives</b>	
<b>AO 1</b>	Demonstrate knowledge and understanding of the principles and concepts of computer science, including abstraction, logic, algorithms and data representation.
<b>AO 1.1</b>	Demonstrate knowledge of the principles and concepts of abstraction, logic, algorithm, data representation or other as appropriate.
<b>AO 1.2</b>	Demonstrate understanding of the principles and concepts of abstraction, logic, algorithm, data representation or other as appropriate.
<b>AO 2</b>	Apply knowledge and understanding of the principles and concepts of computer science including to analyse problems in computational terms.
<b>AO 2.1</b>	Apply knowledge and understanding of the principles and concepts of computer science.
<b>AO2.2</b>	Analyse problems in computational terms.
<b>AO 3</b>	Design, program and evaluate computer systems that solve problems, making reasoned judgements about these and presenting conclusions.
<b>AO 3.1</b>	Design computer systems that solve problems.
<b>AO 3.2</b>	Program computer systems that solve problems.
<b>AO 3.3</b>	Evaluate computer systems that solve problems, making reasoned judgements about these and presenting conclusions.



### Level of Response Questions (extended writing)

Issue/problem/article:

<b>Stakeholder:</b>	<b>Technology involved:</b>
<b>Moral/Social/Cultural/Legal Issues:</b>	<b>Solutions:</b>





We'd like to know your view on the resources we produce. By clicking on the ['Like'](#) or ['Dislike'](#) button you can help us to ensure that our resources work for you. When the email template pops up please add additional comments if you wish and then just click 'Send'. Thank you.

If you do not currently offer this OCR qualification but would like to do so, please complete the Expression of Interest Form which can be found here: [www.ocr.org.uk/expression-of-interest](http://www.ocr.org.uk/expression-of-interest)

**OCR Resources: *the small print***

OCR's resources are provided to support the teaching of OCR specifications, but in no way constitute an endorsed teaching method that is required by the Board, and the decision to use them lies with the individual teacher. Whilst every effort is made to ensure the accuracy of the content, OCR cannot be held responsible for any errors or omissions within these resources.

© OCR 2015 - This resource may be freely copied and distributed, as long as the OCR logo and this message remain intact and OCR is acknowledged as the originator of this work.

OCR acknowledges the use of the following content: Thumbs up and down icons: alexwhite/Shutterstock.com

Please get in touch if you want to discuss the accessibility of resources we offer to support delivery of our qualifications: [resources.feedback@ocr.org.uk](mailto:resources.feedback@ocr.org.uk)

Version 1



## OCR customer contact centre

General qualifications

Telephone 01223 553998

Facsimile 01223 552627

Email [general.qualifications@ocr.org.uk](mailto:general.qualifications@ocr.org.uk)



For staff training purposes and as part of our quality assurance programme your call may be recorded or monitored.

©OCR 2015 Oxford Cambridge and RSA Examinations is a Company Limited by Guarantee, Registered in England.  
Registered office 1 Hills Road, Cambridge CB1 2EU. Registered company number 3484466. OCR is an exempt charity.