



GCE

General Studies

Unit **F732**: The Scientific Domain

Advanced Subsidiary GCE

Mark Scheme for June 2017

OCR (Oxford Cambridge and RSA) is a leading UK awarding body, providing a wide range of qualifications to meet the needs of candidates of all ages and abilities. OCR qualifications include AS/A Levels, Diplomas, GCSEs, Cambridge Nationals, Cambridge Technicals, Functional Skills, Key Skills, Entry Level qualifications, NVQs and vocational qualifications in areas such as IT, business, languages, teaching/training, administration and secretarial skills.

It is also responsible for developing new specifications to meet national requirements and the needs of students and teachers. OCR is a not-for-profit organisation; any surplus made is invested back into the establishment to help towards the development of qualifications and support, which keep pace with the changing needs of today's society.

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.

All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

OCR will not enter into any discussion or correspondence in connection with this mark scheme.

© OCR 2017

Annotations

Annotation	Meaning of annotation
	Blank Page – this annotation must be used on all blank pages within an answer booklet (structured or unstructured) and on each page of an additional object where there is no candidate response.
	Correct point
	Development
	Example / reference
	Repetition
	Justification
	Evaluation
	Not answered question
	Communication 3 marks
	Communication 2 marks
	Communication 1 mark
	Communication 0 marks

Subject-specific Marking Instructions

Assessors are expected to fully annotate **all** responses using symbols from the above list.

In **section A**, some questions are awarded marks for communication separately. For these questions, in addition to adding annotation to indicate the quality of the answer it is necessary to add a separate symbol to indicate the quality of communication. This should be inserted at the end of the answer.

In **section B**, candidates are required to answer one essay. The essay must be accurately annotating using the recommended annotation found in page 5. Having chosen the correct level for the essay a mark is awarded and placed next to the appropriate question number in the RM marks box.

Stages in marking an essay

- read and fully annotate the candidate's response using the question specific annotations found above. Annotation should be placed in the margin
- review the annotation then consider the level in which the answer is located.
- consider the answer's position within the level and allocate a mark.

The mark scheme provides some of the important information that candidates may include in their answers to the questions. It is not definitive or exclusive. Candidates invariably provide additional material or alternative response that may be valid and creditworthy. In this subject, assessors are required to exercise a degree of discretion when considering candidate responses and may, at times, need to use their professional judgement in deciding whether a response should be awarded any marks. General Studies is not exclusively a test of knowledge though candidates are encouraged to use their experience of a wide range of educational experience and actuality in their answers. Assessors are reminded that the extent and level of thinking that has been employed by candidates is the key to unlock the higher level of marks. On the other hand, simple, assertive statements attract little credit.

Assessment Objectives

- There are four assessment objectives:

AO1 Demonstrate Knowledge and Understanding applied to a range of issues, using skills from different disciplines:

- showing an understanding of the subject being examined by including accurate factual information
- including information from a range of sources, from different subject areas
- displaying confidence and clarity in the presentation of facts.

AO2 Analysis and Evaluation by marshalling evidence and drawing conclusions; select, interpret, evaluate and integrate information,

- data concepts and opinions:
- developing and supporting ideas with additional information that enhances and clarifies their meaning
- introducing examples that are selected to support the knowledge being presented.
- discussing the validity of ideas through analysis and evaluation. .

AO3 Understanding Knowledge by demonstrating an understanding of different types of knowledge, appreciating their strengths and

- limitations:
- extending the range of knowledge beyond that which is commonly accepted
- considering alternative, and perhaps, less popular, attractive or plausible viewpoints and offering a different perspective
- including personal experience that might support or refute the knowledge and ideas that are being presented.

AO4 Communication in a clear and accurate way while being concise, logical and relevant:

- writing with fluency and accuracy taking account for the technical rules of language
- producing a response that engages the reader and transmits its meaning without ambiguity
- using a range of relevant language and terminology that is appropriate to the topic.

Note that in Section A of this paper, marks for communication are allocated and awarded separately.

The following table should be used in the allocation of marks. Further information is included with individual questions:

NOTE: If a response gains zero marks for content then the AO4 mark is A0

A3	A very clear response making a case with facility, using a range of appropriate expression and without technical errors
A2	Most of the response is clear though some aspects may remain unclear due to technical errors that hinder understanding.
A1	The response is unclear and it is difficult to follow the sense of the argument(s) presented. There are many technical errors.
A0	This is awarded for no response or when the answer is totally incorrect.

Section A

Question			Answer/Indicative content	Marks	Guidance												
1	(a)	(i)	About 25%	1	Assessment Objectives Balance <table border="1"> <tr> <td></td><td>AO1</td><td>AO2</td><td>AO3</td><td>AO4</td><td>Total</td></tr> <tr> <td>1aii</td><td>1</td><td></td><td></td><td></td><td>1</td></tr> </table> Allow answer within +/- 2% So accept 23 - 27%		AO1	AO2	AO3	AO4	Total	1aii	1				1
	AO1	AO2	AO3	AO4	Total												
1aii	1				1												
1	(a)	(ii)	About 8%	1	Assessment Objectives Balance <table border="1"> <tr> <td></td><td>AO1</td><td>AO2</td><td>AO3</td><td>AO4</td><td>Total</td></tr> <tr> <td>1aii</td><td>1</td><td></td><td></td><td></td><td>1</td></tr> </table> Allow answer within +/- 2% So accept 6% - 10%		AO1	AO2	AO3	AO4	Total	1aii	1				1
	AO1	AO2	AO3	AO4	Total												
1aii	1				1												
1	(a)	(iii)	$37/120 \times 100 = 0.30833 \times 100 = 30.83\%$ or 30.8% or 31%	2	Assessment Objectives Balance <table border="1"> <tr> <td></td><td>AO1</td><td>AO2</td><td>AO3</td><td>AO4</td><td>Total</td></tr> <tr> <td>1aiii</td><td>2</td><td></td><td></td><td></td><td>2</td></tr> </table> Award 2 marks for the following answers: 30.83%, 30.8% or 31% Award 1 mark for the following answer: $37/120 \times 100$ only Or 30% followed by above correct working out Full marks for correct answer with or without calculations shown		AO1	AO2	AO3	AO4	Total	1aiii	2				2
	AO1	AO2	AO3	AO4	Total												
1aiii	2				2												
1	b		Candidates may include three of the following points with good development. the age of teenagers the communication devices being used	12	Assessment Objectives Balance <table border="1"> <tr> <td></td><td>AO1</td><td>AO2</td><td>AO3</td><td>AO4</td><td>Total</td></tr> <tr> <td>1b</td><td>4</td><td>5</td><td></td><td>3</td><td>12</td></tr> </table>		AO1	AO2	AO3	AO4	Total	1b	4	5		3	12
	AO1	AO2	AO3	AO4	Total												
1b	4	5		3	12												

Question			Answer/Indicative content	Marks	Guidance								
			- the time spent communicating during the day - the location of data - the network used - how many people were interviewed - adding the percentage means no extra interpretation needed, clearer - access to/type of social media eg Facebook or Whats app - gender - economic status - when the survey was taken.		Content Award up to 3 marks for each well-developed point. A simple statement would be awarded 1 mark. The question refers to ‘making the Figures more meaningful’ so reference to improving/more meaningful is simply repeating the question – do not credit this part. Define ‘less often’ or include ‘face to face’ these are not additional pieces of information for these particular pie charts. . Communication <table><tr><td>A3</td><td>A very clear response making a case with facility, using a range of appropriate expression and without technical errors.</td></tr><tr><td>A2</td><td>Most of the response is clear though some aspects may remain unclear due to technical errors that hinder understanding.</td></tr><tr><td>A1</td><td>The response is unclear and it is difficult to follow the sense of the argument(s) presented. There are many technical errors.</td></tr><tr><td>A0</td><td>This is awarded for no response or when the answer is totally incorrect.</td></tr></table>	A3	A very clear response making a case with facility, using a range of appropriate expression and without technical errors.	A2	Most of the response is clear though some aspects may remain unclear due to technical errors that hinder understanding.	A1	The response is unclear and it is difficult to follow the sense of the argument(s) presented. There are many technical errors.	A0	This is awarded for no response or when the answer is totally incorrect.
A3	A very clear response making a case with facility, using a range of appropriate expression and without technical errors.												
A2	Most of the response is clear though some aspects may remain unclear due to technical errors that hinder understanding.												
A1	The response is unclear and it is difficult to follow the sense of the argument(s) presented. There are many technical errors.												
A0	This is awarded for no response or when the answer is totally incorrect.												

Question		Answer/Indicative content	Marks	Guidance												
2	(a)	There are 5 ways. SSSS LSS SLS SSL LL	3	Assessment Objectives Balance <table><tr><td></td><td>AO1</td><td>AO2</td><td>AO3</td><td>AO4</td><td>Total</td></tr><tr><td>2aii</td><td>3</td><td></td><td></td><td></td><td>3</td></tr></table> Award 3 marks for 5 correct ways. Award 2 marks for 4 correct ways Award 1 mark for 3 correct ways. If more than 5 ways are offered, mark the first 5 in the list. If the answer is given as ‘5 ways’ or similar wording, award 1 mark (as the different ways are asked for in the question.)		AO1	AO2	AO3	AO4	Total	2aii	3				3
	AO1	AO2	AO3	AO4	Total											
2aii	3				3											
2	(b)	81 and 121 • The numbers in the sequence are squares of odd numbers. • The numbers go up by +8, +16, + 24, Therefore the next part of the sequence would be +32, +40. • The numbers are going up by +8 each time or in multiples of 8. There must be evidence that the candidate is referring to the differences, ie they show them on the list or itemise them. If the response is merely ‘they go up in 8s’ then it suggests they are talking about the sequence. • $(2n - 1)^2$ is the formula (where n is the sequence	2	Assessment Objectives Balance <table><tr><td></td><td>AO1</td><td>AO2</td><td>AO3</td><td>AO4</td><td>Total</td></tr><tr><td>1aiii</td><td>2</td><td></td><td></td><td></td><td>2</td></tr></table> Award 2 marks if the numbers are correct and there is an explanation. Award 1 mark if only the two numbers are correctly given without any explanation. If the missing numbers are incorrect then the explanation is incorrect so zero marks		AO1	AO2	AO3	AO4	Total	1aiii	2				2
	AO1	AO2	AO3	AO4	Total											
1aiii	2				2											

Question			Answer/Indicative content	Marks	Guidance																		
			number)																				
2	(c)		The information might help the company increase sales as follows: Types of energy already in use - to determine if other energy sources are more popular and if so, which ones and why. These may depend on the location of the household/industry. Sales in the last year - to make comparisons with other years to see any trends more clearly. It may give a clearer short term/long term forecast or help determine if other energy companies are gaining more sales. Type of household and industry to target - to see the trends for both households and industry and who is likely to use the most solar power. It may be possible to assess the cost of advertising for more business.	9	Assessment Objectives Balance <table><tr><td></td><td>AO1</td><td>AO2</td><td>AO3</td><td>AO4</td><td>Total</td></tr><tr><td>1b</td><td>3</td><td>3</td><td></td><td>3</td><td>9</td></tr></table> Award up to 2 marks for each developed point. Candidates should not be given credit for repeating the bullet point, or the use of the phrase ‘increasing sales’. For example ‘By researching the types of energy already in use the company can explore its flaws and advertise solar power using solutions to the flaws.’ So the credit worthy part is in bold, the first part repeats the bullet point. In some responses the candidate has referred to ‘targeting’ for the 3rd bullet point. However, as this is part of the bullet point, do not credit it. Communication <table><tr><td>A3</td><td>A very clear response making a case with facility, using a range of appropriate expression and without technical errors</td></tr><tr><td>A2</td><td>Most of the response is clear though some aspects may remain unclear due to technical errors that hinder understanding.</td></tr><tr><td>A1</td><td>The response is unclear and it is difficult to follow the sense of the argument(s) presented. There are many technical errors.</td></tr></table>		AO1	AO2	AO3	AO4	Total	1b	3	3		3	9	A3	A very clear response making a case with facility, using a range of appropriate expression and without technical errors	A2	Most of the response is clear though some aspects may remain unclear due to technical errors that hinder understanding.	A1	The response is unclear and it is difficult to follow the sense of the argument(s) presented. There are many technical errors.
	AO1	AO2	AO3	AO4	Total																		
1b	3	3		3	9																		
A3	A very clear response making a case with facility, using a range of appropriate expression and without technical errors																						
A2	Most of the response is clear though some aspects may remain unclear due to technical errors that hinder understanding.																						
A1	The response is unclear and it is difficult to follow the sense of the argument(s) presented. There are many technical errors.																						

Question			Answer/Indicative content	Marks	Guidance	
					A0	This is awarded for no response or when the answer is totally incorrect.

Section B

Question	Answer/Indicative content	Marks	Guidance										
3	The question involves: - the understanding of the problems of air pollution - the importance of monitoring air pollution - some examples of problems Indicative content Reasons for monitoring air quality include: - the effects on the health of the population, particularly the young and the old - safeguarding future generations by consistent monitoring - the effects on the atmosphere and the dangers of acid rain - checking the effects of car usage so plans may be introduced to decrease the use of motor vehicles - considering effects on agriculture and fishing industries and the consequent impact on the food chain - some indication of the effect on global warming and the ozone layer - it might be considered important to monitor air quality so fines can be imposed on industries to ensure future air quality - to determine if air quality is meeting government standards - to determine the highest pollutant concentrations and take appropriate action - to forecast air quality and prepare to take evasive action - to evaluate the effectiveness of air pollution control	30	Assessment Objectives Balance <table><tr><th>AO1</th><th>AO2</th><th>AO3</th><th>AO4</th><th>Total</th></tr><tr><td>8</td><td>10</td><td>6</td><td>6</td><td>30</td></tr></table>	AO1	AO2	AO3	AO4	Total	8	10	6	6	30
			AO1	AO2	AO3	AO4	Total						
8	10	6	6	30									
			Level 5 (25-30 Marks) - very good knowledge of the importance of monitoring of air quality - very good development together with a very clear reasoned approach and a very good range of relevant examples - very good discussion of the advantages looking at different perspectives and using personal experience to support points - very good communication with very clear, concise organisation and expression. Level 4 (19-24 Marks) - good knowledge of the importance of monitoring of air quality - good development together with a reasoned approach with examples - good discussion of the advantages using personal experience to support viewpoints - good communication with clear organisation and expression. Level 3 (13-18 Marks)										

Question	Answer/Indicative content	Marks	Guidance
	programs - to track the progress of plans for meeting air quality standards and laws - to determine air quality trends that may be affected by local industry - to develop responsible and cost-effective pollution control strategies. Candidates should refer to examples in their response. Personal experience may add strength to the response although it is not essential. Responses which focus too much on global warming will probably only achieve a mark in level 2.		- adequate knowledge of the importance of monitoring of air quality - adequate support and development with some examples - adequate discussion of the advantages with superficial reference to personal experience that may not be clearly linked to the views presented - adequate communication with adequate organisation and expression. Level 2 (7-12 Marks) - limited knowledge of the importance of monitoring of air quality - limited support and development that is brief and without expansion; few examples - limited range of ideas and personal experience to support viewpoints - limited communication with limited organisation and expression. Level 1 (0-6 Marks) - very limited knowledge of the importance of monitoring of air quality - very limited development and examples, if any - no discussion that considers the advantages - very limited communication with very limited organisation and expression.

Question	Answer/Indicative content	Marks	Guidance															
4	The question involves: - an understanding of the importance of mathematics in everyday life - using of examples to highlight the points made. Indicative content The following examples are areas that could be explored: Travel - considering the options in holiday brochures and on websites; comparison of different offers - understanding distances travelled and time zones - calculating exchange rates - looking at the best local deals for travel. Mobile phones - comparing the costs of tariffs and dividends from different companies - investigating the deals offered - understanding of percentages and minutes included in packages. Banking and Investments - comparing a range of products - calculating tax and interest on savings accounts - using ICT for internet banking. Shopping - value for money involving offers, for example, ‘three for the price of two’ - using of percentages to calculate discounts - calculating of VAT. DIY and Home Improvements - measurement of areas - measurement of volume to estimate materials needed - changing units between metric and imperial.	30	<table><tr><th colspan="5">Assessment Objectives Balance</th></tr><tr><th>AO1</th><th>AO2</th><th>AO3</th><th>AO4</th><th>Total</th></tr><tr><td>8</td><td>10</td><td>6</td><td>6</td><td>30</td></tr></table> Level 5 (25-30 Marks) - very good knowledge of the importance of mathematics in everyday life - very good development together with a clear reasoned approach and a range of relevant examples - extensive discussion of the importance of mathematics in everyday life from different perspectives using personal experience to support the points made - very good communication with very clear, concise organisation and expression. Level 4 (19-24 Marks) - good knowledge of the importance of mathematics in everyday life - good development together with a reasoned approach with examples - good discussion of the importance of mathematics in everyday life using personal experience to support viewpoints - good communication with clear organisation and expression. Level 3 (13-18 Marks) - adequate knowledge of the importance of mathematics in everyday life - adequate support and development with some examples - adequate discussion of the importance of mathematics in everyday life with superficial reference to personal experience that may not be clearly linked to the views presented	Assessment Objectives Balance					AO1	AO2	AO3	AO4	Total	8	10	6	6	30
Assessment Objectives Balance																		
AO1	AO2	AO3	AO4	Total														
8	10	6	6	30														

	Personal experience may add strength to the response although it is not essential. Candidates may offer examples from these suggested areas or other examples. Candidates who offer examples from different areas are likely to produce a stronger answer though it may be possible to use one area effectively. Candidates may use examples from a view point of any discipline.		- adequate communication with adequate organisation and expression. Level 2 (7-12 Marks) - limited knowledge of the importance of mathematics in everyday life - limited support and development that is brief and without expansion; a few examples - limited range of ideas and personal experience to support viewpoints - limited communication with limited organisation and expression. Level 1 (0-6 Marks) - very limited knowledge of the importance of mathematics in everyday life - very limited development and examples, if any - no discussion that considers the importance of mathematics in everyday life - very limited communication with very limited organisation and expression.
--	--	--	--

Question	Answer/Indicative content	Marks	Guidance															
5	The question involves: - an understanding of the expression ‘unhealthy lifestyle’ - using examples to highlight the points made - suggesting two ways to deal with the issue. Indicative content An unhealthy lifestyle is generally regarded as one where a person engages in activities that are detrimental to health such as: - smoking or drug misuse - excessive drinking of alcohol - lack of exercise - eating unhealthy foods - failing to maintain a healthy weight. The following can also contribute: - lack of education regarding healthy living and fitness - depression - peer pressure or advertising to persuade against healthy food or exercise - poor access to a healthy diet and so lack of vitamins - hereditary disease which is difficult to monitor. Ways of dealing with the issue include: - more education on the effects of smoking, drinking or drug abuse on the body over a period of time - a regular exercise regime which allows a person to monitor the effects - education on the effects of different types of foods on the body and how they contribute to the general wellbeing of	30	<table><tr><th colspan="5">Assessment Objectives Balance</th></tr><tr><th>AO1</th><th>AO2</th><th>AO3</th><th>AO4</th><th>Total</th></tr><tr><td>8</td><td>10</td><td>6</td><td>6</td><td>30</td></tr></table> Level 5 (25-30 Marks) - very good knowledge of factors which might lead to an unhealthy lifestyle - very good development together with a clear reasoned approach and a range of relevant examples - extensive discussion of the factors that might lead to an unhealthy lifestyle using personal experience to support the points made - very good communication with very clear, concise organisation and expression. Level 4 (19-24 Marks) - a good knowledge of factors which might lead to an unhealthy lifestyle - good development together with a reasoned approach with examples - good discussion of the of the factors that might lead to an unhealthy lifestyle using personal experience to support viewpoints - good communication with clear organisation and expression. Level 3 (13-18 Marks) - adequate knowledge of factors that might lead to an unhealthy lifestyle - adequate support and development with some examples - adequate discussion of the factors that might lead to an unhealthy lifestyle with superficial reference to personal experience that may not be clearly linked to the views presented - adequate communication with adequate organisation	Assessment Objectives Balance					AO1	AO2	AO3	AO4	Total	8	10	6	6	30
Assessment Objectives Balance																		
AO1	AO2	AO3	AO4	Total														
8	10	6	6	30														

	a person, particularly if the person is a vegetarian or a vegan • an understanding of how stress can affect a person's health and coping strategies • seeking help regarding hereditary disease and support for the future Candidates should refer to examples in their response. Personal experience may add strength to the response although it is not essential. If a candidate only discusses ONE way then Max of top of level 3 to be awarded.		and expression. Level 2 (7-12 Marks) • limited knowledge of factors that might lead to an unhealthy lifestyle • limited support and development that is brief and without expansion; a few examples • limited range of ideas and personal experience to support viewpoints • limited communication with limited organisation and expression. Level 1 (0-6 Marks) • very limited knowledge of factors that might lead to an unhealthy lifestyle • very limited development and examples, if any • no discussion that considers the benefits • very limited communication with very limited organisation and expression.
--	---	--	---

Appendix 1: Assessment Objectives balance

Question	AO1	AO2	AO3	AO4	Total
1ai)	1				1
1aii)	1				1
1aiii)	2				2
1b	4	5		3	12
2a)	3				3
2b)	2				2
2c)	3	3		3	9
3,4,5	8	10	6	6	30
	24	18	6	12	60

OCR (Oxford Cambridge and RSA Examinations)
1 Hills Road
Cambridge
CB1 2EU

OCR Customer Contact Centre

Education and Learning

Telephone: 01223 553998

Facsimile: 01223 552627

Email: general.qualifications@ocr.org.uk

www.ocr.org.uk

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

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

OCR (Oxford Cambridge and RSA Examinations)
Head office
Telephone: 01223 552552
Facsimile: 01223 552553

© OCR 2017

