



# Applied Engineering (Double Award) Applied Manufacturing (Double Award)

General Certificate of Secondary Education GCSE1492General Certificate of Secondary Education GCSE1496

# **Report on the Units**

# June 2006

1492/1496/MS/R/06

OCR (Oxford, Cambridge and RSA Examinations) is a unitary awarding body, established by the University of Cambridge Local Examinations Syndicate and the RSA Examinations Board in January 1998. OCR provides a full range of GCSE, A-level, GNVQ, Key Skills and other qualifications for schools and colleges in the United Kingdom, including those previously provided by MEG and OCEAC. It is also responsible for developing new syllabuses to meet national requirements and the needs of students and teachers.

The mark schemes are 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.

The reports on the Examinations provide information on the performance of candidates which it is hoped will be useful to teachers in their preparation of candidates for future examinations. It is intended to be constructive and informative and to promote better understanding of the syllabus content, of the operation of the scheme of assessment and of the application of assessment criteria.

Mark schemes and Reports should be read in conjunction with the published question papers.

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

© OCR 2006

Any enquiries about publications should be addressed to:

OCR Publications PO Box 5050 Annersley NOTTINGHAM NG15 0DL

Telephone:0870 870 6622Facsimile:0870 870 6621E-mail:publications@ocr.org.uk

## CONTENTS

# **General Certificate of Secondary Education**

# Applied GCSE (Double Award) Engineering (1492) Applied GCSE (Double Award) Manufacturing (1496)

# **REPORT ON THE UNITS**

Unit	Content	Page
*	Chief Examiner's Report	5
1492	Principal Moderator's Report (Engineering)	6
1496	Principal Moderator's Report (Manufacturing)	10
4868/4880	Engineering/Manufacturing Written Paper	15
*	Grade Thresholds	19

## Chief Examiner's Report

4866 Design & Graphical Communication – Engineering
4867 Engineered Products – Engineering
4878 Designing Products for Manufacture – Manufacturing
4879 Manufactured Products - Manufacturing
4868 4880 Application of Technology – Engineering and Manufacturing

#### **General Comments**

It was most pleasing to note a general improvement in the performance of Candidates in Units 1 and 2 for both Engineering and Manufacturing this sitting. Once again there appeared to be a varied performance from Centres but with a clear correlation of comprehensive coverage of the specification by those Centres which had attended In-service Training events or who have had Centre consultation visits.

The overall number of entries for each of the above components was somewhat lower than in the previous June's sitting.

Centres are again reminded of the fact that re-sits are available for all units for this examination.

Further support is available through coursework consultancy which is offered by OCR. Details may be obtained from the Technology Subject Officers in Mill Wharf, Birmingham.

It was once again evident that where candidates have undertaken visits to engineering and manufacturing establishments they are more able to address the assessment criteria in Units 1 and 2 and respond to questions in Unit 3.

Centres are advised to look carefully at the contents of the individual Principal Examiners and Moderators reports which have specific details about candidates' performances in the June 2006 examination.

In-service training events are planned for the autumn and it will be of great benefit for Centres to attend to gain a clear understanding of the forthcoming <u>significant</u> changes to the written papers (Unit 3) for both specifications. These changes will come into effect from the January 2007 sitting. Details of these events are available on the OCR website (<u>www.ocr.org.uk</u>).

Centres are reminded that coursework deadlines of 10<sup>th</sup> January and 15<sup>th</sup> May must be adhered to and that on or before these dates Centres need to have forwarded completed Coursework Assessment Forms (CSF's) to the moderator allocated to their Centre. Centres will also need to provide, with selected sample of work, URS for each candidate. The value to the moderation process of having clear annotation of where evidence can be found within the folders should be emphasised and is very much in the candidates' interests.

## 4866 Design & Graphical Communication – Engineering 4867 Engineered Products – Engineering

#### **General Comments:**

It was felt that in general the work presented for moderation this year was of a higher standard than that seen in previous sessions.

Good practice was shown by Centres who used either A3 or A4 formats for presenting work. Problems occurred when Centres used a single wallet per strand and multiple pieces of work were placed in this.

The use of dividers and other methods of separating the five strands of work in the candidate's portfolio are to be encouraged.

It was particularly helpful where Centres had made use of a URS form to identify and locate evidence.

The majority of Centres completed and forwarded the required documentation to moderators by the set deadline, however issues did arise where internal standardisation had not been carried out or where there had been no internal checking of marks from CSF forms when transferring marks onto the MS1. This year the moderation process was slowed down by Centres who had not forwarded the required Centre Authentication form, CCS160.

Centres should carefully consider which project will be attempted in Unit 4867 as it is a requirement that the making of **one** engineered product should use at least one process from each of the following categories; material removal, jointing and assembly, treatment processes and surface finishing.

## **Unit 4866 Design and Graphical Communication**

#### Strand a

The vast majority of candidates produced an initial specification from a given design brief. However there still appears to be confusion between a customer or client and the end user. With several candidates designing for themselves or a family member, they were then the end user which they should not be. Such an approach prevented the required customer feedback as required in a2. To gain marks in a3 the candidate must justify and explain how customer feedback and associated information was used.

#### Strand b

The early parts of this strand were well answered with candidates producing a variety of ideas using a range of drawing techniques. Sketching, 3D drawings and working drawings were evident which included a good level of rendering. Many Centres made use of CAD packages including Pro Desktop to provide ideas. Annotation in some cases was merely a form of labelling rather than explaining the candidate's thought process. In some cases marks had to be adjusted, especially in b3, as candidates justified their final idea rather than evaluating the range of drawing techniques that they had used.

#### Strand c

There was a variety of responses from Centres on this strand, some did very well and covered the requirements of health and safety issues and quality control, but far too many candidates still only make reference to health and safety in general terms. Evidence of good practice looked at generic health and safety issues but then developed these so that they were related to the product being presented.

Further good practice was evident when the candidate reflected on the product being designed and broke down the production process into stages, allowing quality control procedures to be identified and explained.

Quality control methods in far too many cases identified issues such as "check it"; "look at it", "use a ruler" but failed to develop how the check would be made and why it was necessary.

On the rare occasions that the issue of total quality management featured in portfolios it tended to be dealt with in general terms rather than being specific to the design idea.

#### Strand d

Candidates did answer d1 well and used sketches and diagrams to present the design solution. However in many cases due to the lack of an appropriate customer/client it was difficult to explain these ideas (d2) and obtain appropriate feedback so that the final solution could be justified. Modelling including the use of CAD packages and modelling with materials was evident in d2.

Candidates should present their ideas back to a client in this strand in order to score well, those who only present their design to peers can not be expected to fulfil the requirements of d3. Comments can be given on the way the presentation was given but there are no marks available in the assessment grid for this skill.

It should be noted by Centres that this strand is a development of strand b and candidates are required to present and sell their ideas rather that turning the pages of strand b into a power point presentation as a way of attempting to answer d1 to d3.

Strand e

#### Report on the Units Taken in June 2006

E1 was well answered with candidates having a good understanding of how their product would be made.

Production plans were evident for e2 and stages of making were identified. Sometimes candidates referred to work that had featured previously in the portfolio and this was confusing especially when such work was not fully evident.

A limited number of candidates discussed real world engineering especially in relation to their product. On far too many occasions real world engineering was explained relevant to a visit that had been carried out or a video that had been seen. Centres are encouraged to give candidates the widest possible experience when following the course but when information is presented in the coursework portfolio reference should be made to the product being produced.

# **Unit 4867 Engineered Products**

#### Strand a

Several Centres failed to describe a simple engineering process at the beginning of the portfolio. Marks had to be adjusted accordingly as these Centres then awarded marks for the missing work. Production plans were presented and tended to be quite comprehensive, detailing the required engineering processes and quality control issues. However if candidates use this as their starting point they can not gain the marks available in a1.

#### Strand b

Section b1 was well answered with candidates having a good understanding of why production plans were important and the importance of meeting the product specification.

In b2 production plans, that were produced as part of strand a, did have a time schedule included. On many occasions candidates presented a second plan in the form of a Gantt chart which indicated a further time schedule.

Strand b3 was only attempted by a small number of candidates but these had tried to evaluate how their production plan could be improved and raised points which would be appropriate. It is important that candidates do reflect on the schedule and those that attempted to do so scored well.

#### Strand c

As in Unit 4866 health and safety issues tended to be identified in general terms. It is expected in c1 that candidates state why health and safety is important. Work presented did give an impression that candidates were conscious of health and safety issues as reference was made to personal protective equipment and risk assessments were carried out but this work needs to be developed with candidates reflecting on the reason why this is important.

Good practice highlighted quality control tests being carried out and evaluated, and gave evidence of this through the use of digital camera photographs.

## Strand d

There was a mixed response to this strand. Some candidates did not attempt it at all and others explained how ICT could be used in general terms, referring to experiences that they may have seen on a visit, in videos, or through theory topics covered. These candidates tended to ignore their own particular product and did not relate knowledge of ICT to its production.

Good practice was shown by candidates who explained how they had used ICT to produce their product and then went on to reflect the impact that ICT has on production methods.

#### Strand e

A good understanding was shown regarding how the product would be produced but in some cases candidates did not fully answer strand e1 as they merely listed the stages that they would go through rather than describing the process. Similarly in e2 tools and equipment were identified but on too many occasions the reasons for selection were not explained.

As in Unit 4866 when real world issues were addressed the explanation tended to be in general terms or an engineering process explained but not related directly to the product being constructed.

## 4878 Designing Products for Manufacture – Manufacturing 4879 Manufactured Products - Manufacturing

#### **General Comments**

Good practice was shown by Centres who used either A3 or A4. Problems occurred when Centres used a single wallet per strand and multiple pieces of work were placed in this.

The use of dividers and other methods of separating the five strands of work in the candidate's portfolio were much appreciated.

It was particularly helpful where Centres had completed the URS form to identify and locate evidence.

The majority of Centres completed and forwarded the required documentation to moderators by the set deadline, however issues did arise where internal standardisation had not been carried out or where there had been a no internal checking of marks transferred from the CSF forms onto the MS1. This year the moderation process was slowed down by Centres who had not forwarded the required Centre Authentication form, CCS160.

In Unit 4879 candidates must show evidence that they have produced a batch of items made up of at least three components or ingredients which should be manufactured by a team with tasks allocated to individuals. In many portfolios it was difficult to establish what had been produced and by whom. Good practice used photographic evidence to show the batch of items produced.

The portfolios for Unit 4879 **must** be presented as individual candidates' work. Despite this unit being a team task candidates are required to present their own original folder of work covering all sections of the assessment grid.

## Unit 4878 Designing Products to Manufacture

#### Strand a

The majority of candidates managed to produce an initial specification from a given design brief. However, the issue of the difference between who is the customer or client and who is the end user still raises concern. The intention of this unit is that the candidate should be working as a designer following a design brief issued by a client.

Once the initial specification is presented candidates should gather a range of associated information, this aspect of the portfolio needs careful management as far too many candidates were not selective enough in gathering only relevant information. Several wasted time gathering a wide range of information which in a number of instances was superfluous to the project.

In strand a2 a revised specification was generally presented but this area tended to lack the involvement of the client and far too often decisions were made by reference to surveys that had been carried out with end users. Few candidates developed their work into strand a3 by justifying their final design specification.

#### Strand b

Strand b1 was well attempted with a range of ideas produced. Annotation was evident but some of the written text was more in the form of labelling rather than describing or evaluating the ideas. Reference to the specification was, in the majority of the cases, incidental rather than using key points to justify design decisions. On occasions specification points were listed in the form of a table and ideas graded against these points. Good practice showed that this type of work was then evaluated and conclusions made.

On occasions it was difficult to distinguish which idea the candidate had selected as there was no development from the initial design ideas stage.

#### Strand c

Health and safety issues were identified but on far too many occasions these were identified in general terms and not related directly to the product being designed.

Quality control issues were identified by a lot of candidates but many failed to develop this aspect and did not give enough detail as to how they would be carried out or why they were necessary.

Very few candidates covered the topic of total quality management. When it was attempted it was described in general terms rather than relating to how the designed product would be checked using these procedures.

#### Strand d

It is vital that this strand is seen as separate to strand b, with work presented being a development of the work prepared in strand b.

Good practice used a variety of methods to present ideas in strand d1, including coloured sketches, 3D representations and working drawings. The use of CAD was also evident. In strands d2 and d3 candidates benefited by involving their client as this allowed ideas to be explained and justified. It also gave the candidate the opportunity to gain valuable feedback.

Modelling took the form of card models, the manufacture of prototypes in other light materials or food ingredients and the use of CAD packages.

Centres should note that the idea of this section is to present the idea to the client. Power point presentations are a good method of doing this, however the material should be presented to the **client**, as a presentation to peers alone does not fulfil the requirements of the assessment grid.

#### Strand e

Candidates managed to identify manufacturing processes that would be used to produce their designed product. However, this did not fully answer strand e1 and some candidates' marks had to be adjusted, as a description of how the product would be manufactured in quantity is required.

A limited number of candidates discussed real world manufacturing especially in relation to their product. On far too many occasions, however, real world manufacturing was evidenced as a visit that had been carried out or a video that had been seen. Centres are encouraged to give candidates the widest possible experience when following the course but where information is presented in the coursework portfolio reference should be made directly to the product being produced.

# **Unit 4879 Manufactured Products**

#### Strand a

Several Centres failed to describe a simple Manufacturing process at the beginning of the portfolio. Production plans were presented and these tended to be quite comprehensive, detailing the required manufacturing processes and quality control issues. However, if candidates use this as their starting point they cannot gain the marks available in a1.

#### Strand b

Strand b1, when attempted, was well answered with those candidates having a good understanding of why production plans are important and the importance of meeting the product specification.

In b2 production plans, that were produced as part of strand a included a time schedule. On many occasions candidates presented a second plan in the form of a Gantt chart which indicated a further time schedule.

Strand b3 was only attempted by a small number of candidates but those who did tried to evaluate how their production plan could be improved and raised points, which would allow this to happen. It is important that candidates do reflect on the schedule and those that attempted to do so scored well.

#### Strand c

Strand c1 tended to be well attempted with candidates identifying key control points and many developed this aspect showing and explaining how quality control checks are carried out. Centres showing good practice used digital photographs to support written text.

Health and safety issues also featured well throughout this strand; however, candidates tended to ignore the instruction in part c1 to describe the importance of health and safety. Evidence of health and safety issues is normally covered in production plans, risk assessments and including the use of photographs to highlight key points.

The requirements of strand c3, when attempted, tended to be covered in general terms especially the topic of total quality management. Candidates sometimes presented a definition of the term total quality management. This is a good starting point but this should then be developed to consider the implications on the job to be produced, stating how systems can be put in place to support quality assurance.

## Strand d

Strand d1 appears to have been answered much better this year with the vast majority of candidates trying to explain the features of good teamwork.

Allocation of tasks was evident in many folders although sometimes the candidate could spend more time reflecting on why people had been allocated a particular role.

Strand d3 was not well attempted. Some candidates ignored this section, especially where they had to consider the impact of buying-in components.

#### Strand e

Candidates tended to do well in e1 as they used a variety of means to present information showing how the product had been made. Tables showing the stages of making featured in many candidates' portfolios. Once again good practice made use of photographs with written explanations to highlight key points.

Tools and equipment were mentioned, but several candidates failed to develop this point and explain why these items were appropriate. Many candidates also failed to record changes that they made during production.

Real world manufacturing did feature in some candidates' portfolios but this aspect does need to be developed. Far too often this topic was covered in general terms and was not specific to the items produced. Real world manufacturing needs to be incorporated into the project and systems that have been used to produce the product in a limited production environment should be evaluated with comments made as to how these systems would be changed when producing a similar product in industry.

## 4868 4880 Application of Technology – Engineering and Manufacturing

#### **General Comments**

The majority of candidates attempted all of the questions and a significant number gained marks throughout the paper. There was evidence of good time management by a large number of candidates. However, there was less evidence of candidates' first hand experiences of industrial visits and industrial links than in previous examination sessions.

Centres are reminded that this Unit represents one third of a Double Award GCSE and as such demands the appropriate standards and rigour to ensure parity with other GCSE's.

The following areas of the specification are where candidates could show significant improvement:

- wider knowledge and understanding of the Engineering and Manufacturing Sectors;
- wider technological understanding of "Real World" Engineering and Manufacturing and its application;
- knowledge and understanding of modern materials and technologies;
- knowledge and understanding of and the differences between CAM and Robotics technology;
- knowledge and the application of CIE or CIM; and
- detailed and specific knowledge and understanding of Robotics and other different engineering and manufacturing technologies.

#### **Comments on Individual Questions**

An accessible question with candidates able to select their own technologies used in their chosen sectors. Candidates mainly chose safe options such as CAD or CAM but then demonstrated limited understanding of the benefits of their use. Where candidates suggested other technologies they were, in general, able to gain higher marks because they clearly had more understanding of the nature of sector ship. However in general candidates' responses reflected a shallow understanding. A significant number of candidates suggested technologies which were not in fact a technology such as "sandwich wrapping machine". This made it difficult for them to gain appropriate marks in the remainder of the question. The positive marking of this question resulted in the majority of candidates gaining 7

The positive marking of this question resulted in the majority of candidates gaining 7 or 8 marks which is an improvement on the June 2005 and January 2006 papers.

This question was confidently answered by a significant number of candidates with the full range of marks being awarded to a good number of them.
 A less significant number of candidates gained the full 5 to 6 marks but with many confusing the focused ICT and the use of them in the appropriate design stages.

Those candidates who seemingly had little applied industrial understanding responded from their own knowledge base of ICT which was not sufficient to gain reward. In some cases this resulted in no marks being awarded for this question.

3 This question is based on 8.2.4 of the specification "carrying out simple assessment of properties". Evidence suggests that this is still not being undertaken in many Centres despite having been tested in a previous examination paper. Many candidates launched into the industrial testing of these properties without any real understanding of the suggested assessments that might be undertaken in those circumstances. Whilst the rewards for the question are clearly directed at in-house simple assessment activities there was a noticeable lack of true industrial understanding by many candidates.

Where candidates had undertaken the activities marks were easily gained with 2 of the available 3 being consistently awarded. Most candidates failed to suggest either the recording of findings or comparison of the findings with regard to some scale or other data.

4 Once again the full range of marks was awarded for this question but with fewer candidates gaining the full 14 marks as in previous sittings.

At present the structure and format of this question has not changed over the past five papers the exception being the printed exemplar which has clearly supported many candidates. When lower, or in a few cases, zero marks were awarded, it clearly related to a total lack of experience of product analysis activity by those candidates. Evidence of the use of the past papers for revision purposes has increased but marks awarded being less. It is believed that when a candidate actually undertakes their own product analysis then their ability to recall is far higher than when they have attempted to "learn details of an example" from a previous paper.

The selection of an appropriate product is most important and an even smaller number of candidates used the Exemplar Product printed within the question than in previous papers which is seen as very positive.

Once again some of the better examples of selected products were mobile phones, electric toasters, lawn mowers, tractors and, once again, some very good "textile" products such as fireman's jackets.

The best responses followed the structure of the question closely with candidates' categorising their information which was directly related to products. These candidates had clearly undertaken quality product analysis activity in their Centres.

It is pleasing to note that, following the Principle Examiner's report for the January 2006 sitting very few candidates had misused the exemplar material from the revision guide which was issued at Inset Training sessions. Where they did so candidates clearly had "memorised" and then "regurgitated" the information verbatim from the revision guide, which was not relevant to the actual question. This is still seen as very poor practice and should be discouraged. The purpose of the revision guide, and indeed the exemplar questions in the examination papers, are to present opportunities for teachers to engage their students in appropriate learning activities.

The general standard of sketches was an improvement on the June 2005 sitting but is still an area for development in many Centres. The ability to communicate by graphical means is a most important skill and immediately gives candidates

confidence in an examination situation.

The practice of using just the written word "essay" style was still evident and was seen to restrict many candidates. It was rare for full marks to be awarded due to the lack of visual "prompts" which the candidate's sketching would provide.

5 A specifically targeted question on the advantages of CAD and of CAM was disappointingly answered. Credit was given wherever possible but many candidates' perspective of CAD and CAM and Robotics still remains very confused.

A small but significant number of candidates failed to gain the two marks for the correct identification of the correct meaning of both CAD and CAM.

Once again candidates' knowledge and understanding of CIE or CIM was very limited. Whilst the concept is a challenging one CIE/CIM remain fundamental to the application of technology in industry.

Most candidates gained some marks in this question but very few scored well.

6 The description of how Robotics is used in production systems was again poorly answered. Candidates seem not to have any clear understanding of the true nature of the reasons for their use, the factual advantages and disadvantages of their installation and running and maintenance are rarely presented by candidates.

The fact that they work 24/7, they don't get sick nor need wages and can clean themselves seems, on the whole the limit to the majority of candidates' understanding of the topic.

These limited and often unjustified responses will fail to gain rewards at this level of the paper and when the topic appears earlier in the paper, remembering that the paper and each question are racked in their degrees of difficulty, are also unlikely to gain high rewards. This is another fundamental area for teaching and learning for these specifications.

7 A question which was either very well answered, by some 20% to 25% of candidates, or where candidates gained fairly low marks almost by default.

These 20% to 25% of candidates demonstrated a wide and very appropriate understanding of the application of technology. Some very astute observations were suggested by a good number of these candidates reflecting their "comprehensive" understanding of the subject.

Part (b) was less well answered with many candidates missing the focus of the question. However there were a significant number who demonstrated good understanding of the capabilities of modern technologies.

The most common misconception noted was again that of Robotics not being able to undertake small and delicate tasks.

The most common correct response related to the "bespoke" aspect of the production market and some good reference to "perceived quality" was also noted.

8 The reprinting of the instructions of how to respond to a "Discuss" question has once again made a significant difference to the quality of candidate responses to question 8.

It is pleasing to note that there were very few instances where candidates presented copious responses which related to a question on a previous paper which they had used for "mock" or revision purposed. This has been a serious issue for many candidates in the last two examination sessions and suggests candidates are being given better guidance by Centres.

This is a higher order question requiring a wider understanding of the implications of production technology and the global environment. Where candidates suggested issues related to a more local environment they were still rewarded positively.

Experience at "Discussing" at Centre level on familiar topics with an engineering or manufacturing bias will continue to go some way to supporting candidates with this question.

When candidates understood the meaning of the focus of the question they were able to respond with confidence.

Where candidates had had little or no experience of the content of the specification they found difficulty.

There was evidence of some quality coverage of the specification which brought quality responses and thus high marks.

Part (b) of the question was less well answered with candidates seemingly unable to distinguish between the "global environment" and "society".

However there were a significant number of candidates who achieved high marks in this section especially when they followed the "Discuss guidance" reprinted at the top of the page.

# General Certificate of Secondary Education Subject (1492) Engineering June 2006 Assessment Series

## **Unit Threshold Marks**

Unit		Maximum Mark	a*	а	b	С	d	е	f	g	u
4866	Raw	50	46	40	34	29	23	18	13	8	0
	UMS	100	90	80	70	60	50	40	30	20	0
4867	Raw	50	45	40	35	30	24	18	13	8	0
	UMS	100	90	80	70	60	50	40	30	20	0
1000	Raw	100	74	63	52	42	35	28	22	16	0
4000	UMS	100	90	80	70	60	50	40	30	20	0

# **Entry Information**

Unit	Total Entry
4866	2418
4867	2381
4868	2351

# **Specification Aggregation Results**

GRADE	A*A*	AA	BB	CC	DD	EE	FF	GG	UU
UMS	270	240	210	180	150	120	90	60	0
Cum %	0.17	2.29	9.07	23.43	41.41	62.09	77.57	89.6	100

2525 candidates aggregated this series

# General Certificate of Secondary Education Subject (1496) Manufacturing June 2006 Assessment Series

## **Unit Threshold Marks**

Unit		Maximum Mark	a*	а	b	С	d	е	f	g	u
4878	Raw	50	45	40	35	30	24	18	13	8	0
	UMS	100	90	80	70	60	50	40	30	20	0
4879	Raw	50	45	40	35	30	24	19	14	9	0
	UMS	100	90	80	70	60	50	40	30	20	0
1000	Raw	100	74	63	52	42	35	28	22	16	0
4000	UMS	100	90	80	70	60	50	40	30	20	0

# **Entry Information**

Unit	Total Entry
4878	1963
4879	1989
4880	1975

# **Specification Aggregation Results**

GRADE	A*A*	AA	BB	CC	DD	EE	FF	GG	UU
UMS	270	240	210	180	150	120	90	60	0
Cum %	0.2	2.4	11.6	29.6	48.7	67	81.7	94.1	100

2014 candidates aggregated this series

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

# **OCR Information Bureau**

## (General Qualifications)

Telephone: 01223 553998 Facsimile: 01223 552627 Email: helpdesk@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

