

Design and Technology

Advanced GCE F521/01/02

Advanced Innovation Challenge

Mark Scheme for June 2010

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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.

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Outlines initial thoughts, these are predictable/non-creative.	Outlines initial thoughts in some detail, some creative thinking.	Clearly outlines initial thoughts in detail, responding with an open mind showing unexpected and/or challenging ways of thinking.	Box 1,2
Analyses the problem at a superficial level that lacks depth Some consideration of a user/market resulting in a design brief.	Analyses some aspects of the problem. Identifies a user/market, resulting in a design brief.	Analyses problem in depth, responds in a way that allows scope for innovation. Identifies a user/market resulting in a clear design brief.	Box 1,2,3 & 4
Produces a basic or superficial specification that is vague/generic.	Develops an adequate specification that gives some basic requirements of the product.	Develops a detailed specification that identifies the key features of the product.	Box 5
0 1 2 3	4 5 6	7 8 9	
Presents only a limited range of innovative/creative ideas	Presents a good range of innovative/creative ideas	Presents a wide range of innovative/creative initial ideas	Box 6
Using annotated sketching at a limited level with little detail of construction/materials Little or no reference made to the design specification.	Using reasonable quality annotated sketching showing some detail of construction/materials. Some reference to the specification	Using high quality annotated sketching showing full details of construction/materials. Good reference to the specification	Box 6
Presents only a limited and mainly subjective evaluation of ideas with little or no justification of decisions.	Presents an adequate and objective evaluation of ideas against the design specification and justifies most decisions.	Presents a detailed and objective evaluation of ideas against the design specification and justifies all decisions.	Box 6,7 & 8
Presents a limited range of evidence to show the sources of inspiration and influences on the designing.. Limited reflection on their design and little/if any response to feedback from others.	Presents an adequate range of evidence to show the sources of inspiration and influences on the designing. Some reflection on their chosen design and response to feedback from others.	Presents a wide range of evidence to show the sources of inspiration and influences on the designing. Reflects on their chosen design and responds to feedback from others, making further improvements if necessary.	Box 6,7,8,9 & 10
0 1 2 3 4	5 6 7 8	9 10 11 12	
Presents limited improvements, and limited evidence of modelling, experiments, testing, and modifications to their design,	Presents improvements, presents some evidence of modelling, experiments, testing, making modifications their design	Presents improvements, presents evidence of modelling, experiments, testing, making modifications to their design to define and refine it,	Box 11
Little if any consideration of materials, components or ingredients and methods of manufacture.	Some consideration of materials, components or ingredients and methods of manufacture.	Thorough consideration of materials, components or ingredients and methods of manufacture.	Box 11
Limited understanding of sustainability issues and how this affects their design. Produces a simplistic action plan for making that shows limited awareness of materials/ingredients/resources etc.	Some consideration of sustainability issues Produces a reasonable action plan for making, to include a list of materials/ingredients/resources, etc	Good consideration of sustainability issues etc . Produces a detailed action plan for making, to include a list of materials/ingredients/resources, etc.	Box 11, 12&13
0 1 2 3	4 5 6	7 8 9	
Records progress at various stages but limited detail and thought Use of materials and processes is limited as are any further modifications to their design.	Record and reflects on progress at various stages Selects and uses materials adeptly and makes further modifications to their design.	Records and reflects on progress in detail at various stages Selects and uses materials innovatively and creatively and further develops idea to define and refine it.	Box 14, 15, 16, 17 , 18 and photos 1, 2 & 3
Product/model is finished to a poor standard/or is incomplete.	Completes a product/model to a good standard. Model/product accurately reflects design.	Completes a product/model to a high standard. Model/product accurately reflects design.	
Limited range of making skills apparent.	Demonstrates accuracy of making skills.	Demonstrates a range of making skills/ and or complexity.	
0 1 2 3 4 5 6 7 8	9 10 11 12 13 14 15 16	17 18 19 20 21 22	
Presents limited modifications to their idea, using basic annotated sketches.	Presents some realistic and detailed modifications to their idea, using annotated sketches.	Presents realistic and detailed modifications to their idea, using annotated sketches; improvements are creative.	Box 18
Produces a limited evaluation of their product identifying some strengths and weaknesses and shows limited consideration of the users/market.	Produces a reasonable evaluation of their product identifying some strengths and weaknesses and shows good consideration of the users/market.	Produces a detailed evaluation of their product identifying strengths and weaknesses and shows good consideration of the users/market.	Box 18
Some evidence of evaluation of their design against their product specification at a superficial level.	Reasonable evaluation of their design against their product specification.	Evaluates their design thoroughly against their product specification	Box 18
0 1 2 3	4 5	6 7 8	

Initial Thoughts	Designing	Development	Making	Evaluating

Name:	Candidate No:	Centre No:	Examiner
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Box 1,2

Box 1,2,3 & 4

Box 5

Box 6

Box 6

Box 6,7 & 8

Box 6,7,8,9 & 10

Box 11

Box 11

Box 11, 12&13

Box 14, 15, 16, 17 , 18 and photos 1, 2 & 3

Box 18

Box 18

Box 18

Total /60

2010
June

02 Paper

Two outline presentations to an expert/ panel will be presented; answers will be in the form of written material supported by annotated sketches. (10 Marks each). QWC is assessed in P and S.

P and S are annotated on script where found, the only other annotation that can be included is the use of a vertical line against anything that is completely irrelevant to question.

P relevant points/issues raised up to 4 marks
Points must cover each bullet point within question and relate specifically to their product and the overriding question.

One bullet point or one relevant point	1mark
Two bullets points or one bullet point and one relevant point	2 marks
All three bullets points or two bullet points and one relevant point	3 Marks
All three bullets points and one further relevant point	4 Marks

S supporting example and/or sketches up to 3 marks
 Must relate to the three bullet points

QWC quality of written communication up to 3 marks (this is not annotated on paper as it is an overview of whole discussion)

QWC Level descriptors

3 Marks: Presents information and arguments in a clear and concise manner, using appropriate technical phrases and high quality written communication skills.

2 Marks: Presents information and arguments in a reasonably clear and concise manner, with limited use of technical phrases and reasonable written communication skills

1 marks: Presents information and arguments in a manner that lacks a clear and concise approach, with little or no use of technical phrases and basic written communication skills.

Use the whole mark range, including maximum marks or zero where appropriate.

Question 1

Discussion should include:

- **Cultural differences must be made relevant to the candidates product** in terms of use, specific materials, patterns, name and shape of a product, cultural and social trends and lifestyle Issues etc and not generic.

Discussion could refer to belief and culture, traditions, different cultures and language, avoiding offence, accurate translation when importing products. Cultural diversity is the difference in the **cultures of groups of people** and can relate to the differences in peoples' language, to their music, to their artwork, to their attitudes, to the way they do things and to the way that people treat each other - people from different cultures are different in a variety of ways, including different ways of looking at things different ways of dressing different ways of expressing personality/goodness. England has a multicultural society – there are many different cultures. There are also cultural differences between generations. For example, teenagers dress differently from their parents, and use text-messaging more on mobile phones. Thinking about the whole life cycle, how far does the product promote cultural diversity? They may refer to inclusive design/barrier free design, or products that are morally and ethically acceptable in one country may be unacceptable in another. E.g. leather or fur products, use of sweat shops, garments that are short or have short sleeves in some countries.

They may use examples to support their discussion or suggest research Islamic art different e.g. not allow to use images of people instead they use patterns and geometric designs, in Japanese culture its hugely important to have your own personal space, the design of the walkman cushioned against the busy environment, regain personal space whilst commuting. The translating of information into the region's language, changing any cultural symbols such as flags, ensuring that the material makes sense to the user and doesn't include anything that is culturally alien or even offensive to the reader. This is particularly relevant when referring to jokes or anecdotes where word-for-word translations are often unsuitable.

Designers have to find out what cultural values, social values and lifestyles their target market have. E.g. Eastern culture may be in fashion. Socially people may want environmentally friendly garments. People may have active lifestyles and need appropriate garments. Every culture has its own way of doing things, reflected in the clothes we wear, the food we eat, what we like to do in leisure time and so on.

- Material selection and production issues – implications of cost and manufacturing levels, must relate to product and associated cultural issues.
- The product impact could be related to environmental impact but must relate to the candidates product in relation to the cultural issues, what happens when we design new products, what happens when we make new products, and what happens when we use new products.

Question 2

Discussion should include:

- USP's , the unique selling points and features, importance of visual impact to attract interest/sales aesthetics, colour and texture, styles and trends e.g. minimalist, eco design, organic foods etc, must relate to their product. Marketing/advertising techniques that could be used to promote the products sales or useage, this must be specific to the product. Information about the market their product would be aimed at and trends that appeal to them, how they could be targeted – **discussion must relate to the product designed in challenge**, modifications to product to target particular markets and trends.
- commercial viability of their product and expected volume of sales and pricing. Product life cycle, growth – maturity- decline etc. product use and the feasibility of the product, comparisons with other products that are aimed at same market and are successful. Scale of production and modifications to the design to make it more economically viable, details of chosen materials and manufacturing techniques all related to their product.
- Specific improvements to make their product more economically viable and cost effective, discussion should relate to materials, components or manufacturing methods , maintenance or energy during use etc

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