

Examiners' Report/
Principal Examiner Feedback

Summer 2012

Principal Learning

Engineering

EG208 Paper 01

Exploring Engineering Innovation,
Enterprise and Technological
Advancements

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Unit EG208_01

Exploring Engineering Innovation, Enterprise and Technological Advancements

General Comments

Overall, the paper produced a good range of responses. Lower ability candidates often gave generic responses to questions that gained limited marks. Some candidates often repeated answers or phrases which limited their access to some marks. The more demanding questions at the end of the paper provided candidates with an opportunity to expand and apply their knowledge and it was pleasing to see some good responses. Candidates would benefit from being taught examination skills and techniques as often they did not read the questions properly and questions were not answered using the 'state, describe, explain' method.

Question 1

This question centred around (a) & (b) identifying and describing types of intellectual property, (c) identifying an organisation for registering intellectual property, (d) reasons for registering intellectual property and (e) features of registered designs.

Part (a): the majority of candidates correctly identified the correct intellectual properties as being 'Patents' and 'Trademarks'. Most were able to offer simplistic descriptions for 'Design' and 'Copyright'.

Part (b): many candidates correctly identified 'Copyright' for protecting the instructional DVD.

Part (c): this question was answered reasonably well with many suggesting the 'Intellectual Property Office' as the correct response. However, there are still many centres that still use the former name of 'UK Patent Office', which was accepted but needs to be phased out in future series.

Part (d): there were some good responses from candidates allowing them to access at least four marks.

Part (e): most candidates were able to identify at least one visual feature, usually 'colour' although there were a number that gave responses such as 'materials' and 'texture'. However, a popular incorrect response referred to 'size' as a visual feature.

Question 2

This question was aimed at market research activities, development and financial aspects of organisations.

Part (a): this question was answered poorly with many candidates only scoring half marks. Many candidates produced repetitive responses centred around the need to look at existing products or visiting shops that sold the same type of product. Many candidates also talked about identifying the materials and process required to manufacture the product but these were not seen as market research activities.

Part (b): candidates typically scored half marks here with responses centring around the need to make a prototype and testing to see how well the product works before production.

Part (c): the majority of candidates scored half marks here with typical responses referring to the company being in debt to the bank but not necessarily for the grant. Better responses focussed on added interest of the loan and bankruptcy issues.

Question 3

This question was aimed at testing knowledge of modern materials.

Part (a): It was pleasing to see the majority of candidates being able to correctly link the materials with the appropriate description.

Part (b): Many candidates were able to correctly identify the physical property 'elasticity'. However, there were far too many incorrect responses for 'hardness'.

Part (c): It was pleasing to see that candidates were able to identify a specific polymer used for the pre-release product. The most popular responses were 'PVC' or 'Polypropylene'. However, there are still a number of candidates who are simply quoting generic terms such as 'thermoset', 'thermoplastic' or simply 'plastic'.

Part (d): This question was a very good differentiator for this paper. The majority of candidates were able to give simplistic definitions of both a ceramic and composite material. The better candidates responded with detailed descriptions that included references to 'heat resistance' for ceramics and 'improved properties as a result of combining two materials' for a composite.

Question 4

This question was aimed at the impact of photovoltaic cells on the home, work place and built environment.

Part (a): The majority of candidates scored well here and were able to gain two marks for recognising the reduced energy costs.

Part (b): most candidates struggled with this part and simply repeated the response for part (a). The question clearly asked for different advantages and better responses referred to reduced costs of operating machinery.

Part (c): similarly with this part, candidates with better responses referred to reducing carbon emissions and global warming.

Question 5

This question was centred around the injection moulding process.

Part (a): There was a marked improvement in responses for this question. It is clear that many centres are very familiar with this process. Candidates were able to demonstrate their knowledge and understanding through detailed written responses and good sketchwork. However, a number of candidates got confused and described the process of Vacuum Forming.

Question 6

This question examined the candidates' knowledge of sustainable sources of energy and energy consumption implications.

The majority of candidates sitting the examination paper attempted the final questions. This is pleasing as it is good exam technique for candidates to attempt all questions.

6(a) and (b): Many candidates were able to identify two sustainable sources of energy, mainly 'wind' and 'wave/tidal' power. Also most candidates were able to compare and contrast both methods. Many gave detailed descriptions of their advantages and disadvantages with some detailing how the energy is generated. However, a number of candidates did not read the question properly and simply stated 'solar'.

6(c): This is quite a demanding question. Responses were simplistic and centred around material reuse or recycle and using renewable energy sources to power machines. Some candidates gave coherent responses detailing the use of alternate forms of energy to power machines and the need to source material locally to reduce transport costs and energy consumption. Also candidates used bullet points in their answers which generally limited the access to L3 marks.

Overall this has proved to be a slightly easier paper than the previous series, due mainly to the fact of Question 5. There were a significantly reduced number of blank spaces for this particular question which was very encouraging.

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