

Examiners' Report/
Principal Examiner Feedback

Summer 2012

Principal Learning

Engineering
EG301 Paper 01

Investigating Engineering Business
and the Environment

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Unit EG301/01

Investigating Engineering Business and the Environment

General Comments

Some candidates were able to respond extremely well to some of the questions, although in several cases candidates performed less well than was expected.

Section A

Question 1

Candidates tended to have an understanding of where manufacturing engineering fits within the classification of industries, with the majority identifying the secondary classification.

Question 2

It was surprising that the majority of candidates were not able to correctly identify housing as the area which does not involve civil engineering.

Question 3

Similar to question two, the majority of candidates were unable to correctly identify that a telecommunications engineer would not construct radio masts.

Question 4

Candidates were able to show that they had a fair understanding of the information which is found in a financial plan.

Question 5

Over half of the candidates identified that a enamel paint is considered a pollutant.

Question 6

Only a minority of candidates were able to recognise the EU definition of a small business.

Question 7

Costing techniques tend to be an area where candidates often do not perform as well as expected. There was a general lack of awareness of the theory of absorption costing with fewer than half of the candidates identifying the correct answer.

Question 8

The majority of candidates were able to show that they could correctly identify the symbol used for toxic substances.

Question 9

Candidates showed a good understanding of the type of document which would be used to identify electronic components for use in an alarm system as being a circuit diagram.

Question 10

Candidates were able to calculate the correct profit from the information which had been given to them in the majority of cases.

Question 11

Candidates seemed to be unaware of the types of PPE which should be used for operating a lathe, with a significant proportion considering a hard hat or gloves as appropriate attire for the operator.

Question 12

Candidates were generally able to correctly identify the difference between direct and indirect costs.

Question 13

There seemed to be confusion regarding the fact that a supplier is responsible for providing information about the safe use of materials to the end user.

Question 14

Candidates were comfortable identifying the types of injury which are reportable and those which are not according to RIDDOR.

Question 15

Over 70% of candidates were correctly able to identify that a flat business structure would not have middle managers.

Question 16

Candidates had a sound understanding of the different activities associated with the oil industry.

Question 17

It was pleasing to note that the majority of candidates had a secure understanding of the responsibility of the employer to provide PPE for engineering activities.

Question 18

Awareness of designing out hazards in order to improve safety on a construction site was very limited with only 20% of candidates correctly identifying an appropriate method.

Question 19

Many candidates were unable to correctly identify the drawing as being a first angle projection, with many stating isometric instead.

Question 20

Candidates seemed to lack familiarity with the types of strategy which may be considered long term to those which are short term or operational.

Section B

Section B consists of short to medium answer questions. The nature of these questions tends to allow candidates access to 1 or 2 marks for demonstrating a basic understanding of the subject, with the higher marks being awarded to those with a thorough knowledge of the subject.

Question 21

Most candidates achieved 1 mark or higher for this question. Generally this would be as a result of identifying that a strong UK Pound would allow for cheaper imports of materials or products. Higher achieving candidates also identified that exports would be more expensive and likely to sell less well abroad.

Question 22

Candidates who achieved marks with this question tended to do so through general knowledge rather than a secure understanding of the factors which should be included when setting priorities. Where marks were gained this tended to be as a result of indicating costs and profitability would be important. Higher achieving candidates would continue to consider the ability of the company to produce products, the skills available, the activities of competitors or customer demands.

Question 23

Candidates tended to achieve between 2 and 4 marks for this question, probably due to first hand experience of working in a workshop environment. Typical responses included the need to reduce the possibility of breakdown, to ensure machines functioned as expected, to make sure machines were safe for the operator and that costs could be reduced.

Question 24

Candidates tended to have only limited knowledge of the term 'work in progress' with marks generally being obtained for identifying that funds would be tied up in the investments and that there is some form of audit trail produced. A significant number of candidates made reference to the need to keep records of maintenance procedures, which tends to suggest that some candidates do not prepare fully for examinations and would benefit from developing their examination techniques.

Question 25(a)

Candidates were able to identify that an established company would be one which has built up a reputation and a market share. Few candidates were however able to identify that an established company will have operated for two years or greater and have built up good will with customers.

Question 25(b)

There was a common misunderstanding amongst candidates of the term 'design capability'. A significant number of candidates thought this referred to the ability of a product to function as desired rather than the ability of an engineering business to design and produce new products.

Section C

This section comprised of one longer answer question with two parts and a second long answer question, together worth a total of 20 marks. Performance across the questions was variable, with candidates tending to perform better in question 26(a) than in questions 26(b) and 27.

Question 26(a)

Candidates tended to show a good understanding of the need to consider competitive products before producing new designs. Candidates tended to respond by considering the market share which could be available, the potential profits of a new product, the trends and technologies which are already available and functions and features which competitors include in their existing product lines.

Question 26(b)

Candidates tended to gain some marks by identifying that local materials could be made available without the need to transport them from other countries, thereby reducing transportation costs. Many candidates also gained marks by identifying that using local materials would provide employment for the local population and improve the local economy. Some candidates further identified that local workers will have the skills needed to work with materials which they are familiar with.

Many candidates included in their responses generalised aspects of sustainable materials, whilst these statements tended to be valid they were not credited as they were not specific to materials available in the local area. Typically such answers would include statements such as 'trees can be

replanted' which although relates to sustainability does not relate to local materials.

Question 27

Some candidates showed a very good understanding of the roles and responsibilities of the HSE, however in some cases there was also significant misunderstanding and/or lack of knowledge. Candidates who scored well did so by indicating that the HSE is responsible for investigating the causes of accidents and can do this by inspection. In some cases these descriptions were detailed and included the ability to prosecute for breaches in safety. Candidates who scored low marks were generally those who thought that the HSE was an employee of an engineering business who was responsible for the day-to-day safety of the site, and would write risk assessments for individual operations.

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