

# Examiners' Report

January 2010

Principal Learning

## Engineering EG301 Investigating Engineering Business and the Environment

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# Level 3 Unit 1 Investigating Engineering Business and the Environment

## Introduction

It was pleasing to see that the majority of learners attempted most of the questions which formed Sections B and C of the paper. Overall, the performance of candidates was significantly lower than in the previous series. There are several possible reasons for this: firstly, candidates in their first year of the course will only have had 4 months experience prior to the examination; it is also possible that there were a number of re-sit candidates from the previous series who have attempted the unit again.

Some candidates had been prepared for the examination by the use of the Sample Assessment Materials and the examination paper from the previous series, and were therefore familiar with the format of the examination.

## Question 1

A significant proportion of candidates performed well for this question which concerned primary industries, and were able to correctly identify Oil as the answer.

## Question 2

many candidates were aware of the different classifications of businesses by size, correctly identifying the size of a micro business.

## Question 3

only a minority of candidates were able to show an understanding of demographics, with only a small percentage correctly identifying 'family size'. It is presumed that many incorrect answers identified 'religious beliefs'

## Question 4

it is encouraging that 70% of candidates were able to identify that both the contractor and sub-contractor have responsibilities for health and safety.

## Question 5

Nearly all candidates were able to identify annotated diagrams as being the most suitable method of communicating instructions to a user.

## Question 6

candidates were not particularly familiar with the role of a commissioning engineer, with a popular but incorrect answer being 'collecting and analyzing near-surface deposits'.

## Question 7

the majority of candidates were not aware of matrix structures for management of a project, with a little over 1/5th of candidates getting the correct answer.

## Question 8

candidates seemed to be unaware of the term 'make or buy', selecting instead 'sale and return' or 'invest or purchase' as their answers.

## Question 9

In line with other questions about regulations, there seemed to be limited understanding of the working time regulations.

## Question 10

Only a very small minority of candidates were able to demonstrate an understanding of costing techniques. This is an area which needs to be developed by many candidates.

**Question 11**

roles and responsibilities of marine engineers seemed to be an area where candidates lacked a great deal of understanding, with installing fresh water supplies being a common error.

**Question 12**

most candidates had an awareness of 'outsourcing'. In instances where there were errors, franchising was a popular response.

**Question 13**

Candidates seemed to be more confident with the role of structural engineers than other engineering sectors.

**Question 14**

In line with the other questions concerning regulations, there seemed to be little understanding of the Factories Act amongst candidates. Less than 1/3rd of candidates gave the correct answer for this question.

**Question 15**

many candidates were able to correctly identify the correct value using the exchange rate given. A common error amongst candidates was to do the calculation in reverse.

**Question 16**

only a minority of candidates were able to correctly identify the method of lifting which could cause the greatest harm.

**Question 17**

It was a concern that just over half candidates were able to identify 'TQM' as a method of quality assurance. A common incorrect answer was MRP. Presumably this being due to familiarity with 'CNC' and 'GDP'

**Question 18**

candidates demonstrated a good understanding of renewable energy. This was perhaps due to the increased media coverage of environmental issues in recent months.

**Question 19**

in many cases, candidates did not have a sound understanding of financial issues, despite these methods being named explicitly in the specification. Candidates did not have a good understanding of marginal costing.

**Question 20**

only a quarter of candidates were able to demonstrate a good understanding of CoSHH. This is despite the requirements of an awareness of CoSHH and health and safety regulations in other units.

**Question 21**

generally well answered by candidates, with candidates being generally able to identify an advantage and a disadvantage of being a sole trader. Commonly, these were being able to choose working hours, or not needing to share profits, and that if the business had difficulties there would be no one to share them with.

### **Question 22**

Candidates did not show a great deal of understanding of financial planning, with candidates often repeating the same points in their answer. Candidates tended to gain marks for mentioning income and expenditure, with only a small number making reference to concepts such as acid tests.

### **Question 23**

Candidates did not seem to have a good understanding of the terms asked for. Marks awarded for this question tended to be low, with credit being given to relevant terms. It was rare for a candidate to gain full marks for this question.

### **Question 24**

The range of responses for the three parts of this question tended to be very varied. In some cases the incorrect gross profit was identified, although the remainder of the question was answered correctly. The majority of problems which were encountered by candidates came from their inability to calculate either the gross profit or the total expenses.

### **Question 25**

Most candidates were able to correctly identify the activities which were concurrent from the Gantt chart, however only a small percentage could correctly identify the float from the chart. This could be a result of a lack of understanding of the term 'float'.

Only a minority of candidates were able to calculate the number of staff-days required to complete activity G. Common errors included identifying how long the task would take, or how many staff would be needed. These were not linked together to provide the answer.

Candidates performed much better for part d which concerned the evaluation of the use of Gantt charts. Common responses included 'being able to see progress', 'identify when activities should start/end', 'able to see what is on time'.

### **Question 26**

most candidates provided a 'D&T' type answer for planning a project, rather than the specific activities of making and assembly. Where candidates did gain marks, they tended to be awarded for 'quality' type issues. Some of the higher performing candidates achieved marks for considering the processes which would be involved, the equipment needed and the material requirements.

In part (b) candidates also tended to score poorly. Many candidates referred to the continuous availability of the product in shops or similar. Those candidates who did score some marks achieved them for considering the benefits of automation, reduced labour needs, bulk-buying savings.

Most candidates performed significantly better in part (c) where marks were awarded for the correct identification of environmental issues which would affect the local community. Common answers tended to consider changes to sleep patterns, lights being on 24 hours a day, increased traffic noise, pollution of the water supply, danger to wildlife, toxic materials in landfill etc.

### **Question 27**

candidates either performed very well, or poorly for this question. Those who scored well were able to state a wide range of responsibilities for the employee. The candidates who performed less well tended to misread the question and made reference to the roles of the employer. In some cases, candidates were able to gain some marks for mentioning responsibilities which are shared.





## Statistics

### Level 3 Unit 1 Investigating Engineering Business and the Environment

	Max. Mark	A*	A	B	C	D	E
<b>Raw boundary mark</b>	60	54	48	42	36	30	25
<b>Points Score</b>	14	12	10	8	6	4	2

#### Notes

**Maximum Mark (raw):** the mark corresponding to the sum total of the marks shown on the Mark Scheme or Marking Grids.

**Raw boundary mark:** the minimum mark required by a learner to qualify for a given grade.





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