Level 3 Technical Level
DESIGN ENGINEERING: MECHATRONIC ENGINEERING

Unit 1 Materials Technology and Science
Report on the Examination

F/506/5952
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Version: 1.0

General Comments

The examination performed as expected. Most students demonstrated at least a basic understanding of the unit's content. Successful students could apply this understanding to the contexts presented both analytically and scientifically. The most successful students appeared to read and understand the questions thoroughly and produce sound answers that highlighted their knowledge and understanding. The least successful students found it difficult to apply their knowledge and understanding to the questions posed.

Section A

Questions One to Ten (multiple-choice)

All multiple-choice questions performed as expected, with the vast majority of students gaining at least 5 of the 10 marks available. Questions 3, 4 and 8 proved to be the most difficult. Questions 9 and 10 appeared to be well answered by this group of learners.

Question Eleven

This question is well received by most students on a regular basis; this series was no exception. A large majority of this cohort scored some good marks here with many gaining the maximum of 6 marks.

Question Twelve

This question gave the students the chance to show their knowledge of materials and materials'

chemistry. It was encouraging to note that most of the group gained some good marks through their answers here, showing that some good teaching had taken place on this engineering subject.

Question Thirteen

Here, the students were expected to answer with the use of a diagram. This was poorly answered with very few entrants gaining full marks for their explanations of a magnetic field. However, their knowledge on the use of magnets was quite encouraging with some good marks amassed.

Question Fourteen

Overall, this section on thermal radiation was disappointingly answered. Many of the students didn't appear to realise that thermal radiation is a form of electromagnetic radiation. However, the explanations for potential energy were well answered.

Section B

Question Fifteen

This was the most difficult question on the paper. However, of those students who attempted it, the clear majority of them registered some marks. The major difficulty appears to stem from this group's lack of exposure to this aspect of electronics.

Question Sixteen

This question was well-answered by this cohort with a good number of students gaining more than half-marks. The biggest cause for concern was the groups lack of knowledge of some basic engineering units.

Question Seventeen

All three parts of this question were quite well-answered. It was clear that students were experienced in the use and application of belt drives in engineering systems.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the Results Statistics page of the AQA Website.

Converting Marks into UMS marks

Convert raw marks into Uniform Mark Scale (UMS) marks by using the link below.

UMS conversion calculator