Level 3 Technical Level
DESIGN ENGINEERING: MECHATRONIC ENGINEERING

Unit 3 Mathematics for engineers
Report on the Examination

J/506/5953
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Section A

Question One

Many of the students answered this question very well indeed. Many of this cohort correctly calculated the percentage waste material.

Question Two

It appeared to be that case that some of this cohort of learners hadn't had exposure to simultaneous equations as some offered no solutions at all here. The same could be said for the plotting of straight-line graphs also.

Question Three

The is question was based around vector addition. The answers where hit and miss; some of the cohort grave good answers whereas others gave nothing at all. Vectors are a vitally important component of engineering mathematics at level 3 and, therefore sufficient time needs to be devoted to them during classroom sessions.

Question Four

This question asked the students to calculate the mean, median and standard deviation of a sample of screws' lengths. There were some excellent answers here; very encouraging.

Question Five

Most students scored some marks here on this subject – integration. However, this difficult engineering mathematics' subject is still proving a step too far for many level three learners.

Section B

Question Six

The use of the sine and cosine rules here was limited to a low proportion of the whole cohort – quite disappointing. Some students drew scale drawings, thus accessing some marks, which was a valid approach to take.

Question Seven

The answer to this question had its roots in transposition of formulae and use of natural logarithms – both defined aspects of the specification. Both disciplines were poorly addressed and therefore full marks, for this cohort, were few and far between.

Question Eight

The answers to this question had its roots in triangles, trigonometry and energy. Very few of the students had any idea what a 10% slope was. As a result, few of the students scores full marks here.

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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