

Moderators' Report/
Principal Moderator Feedback

Summer 2015

Pearson Edexcel GCE in Engineering
Unit 6934_01
Applied Engineering Systems

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Publications Code UA042971

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UNIT 6934

Applied Engineering Systems

The candidates' performance covered the full range of the mark spectrum, from single figure to full marks. The majority of centres presented candidate work neatly, which significantly aided moderation, but there are still centres presenting criterion work in ring binders, plastic presentation wallets, etc. Candidates should be asked to use treasury tags in presenting portfolio evidence as this considerably aids moderation. A small number of centres are encouraging candidates to use answer booklets for each individual activity, which considerably helps the moderating team.

Centres are encouraged to annotate candidate portfolios where marks are being awarded, as this significantly aids the moderation process.

Activity 1

Assessment criterion (a)

- (i) Most centres appear to have carried out the required test and candidates worked with the data. Performance with data handling differed considerably between centres. A range of different materials was used by centres, but there were a considerable number of candidates who failed to identify the material sample.
- (ii) The graphs of stress versus strain seemed to cause most candidates few problems but there were a number who did not complete this activity. Candidates were completing calculations without the relevant SI units and by doing so lost marks. The use of SI units is most important in engineering mathematical equations and candidates should be encouraged to use them in future examination series. Candidates should demonstrate how Young's Modulus is calculated and not accept the testing machine's printout as evidence of determining the value.
- (iii) The structure calculations were generally fine with thorough answers provided by the candidates. Again, the use of SI units was a problem, with candidates not being able to access the full marks.
- (iv) Calculations for this task were well answered by the candidates answering task (iii) correctly. A small number of candidates could not perform this calculation.

- (v) SI units were a constant issue in this task and a number of candidates obtained unusually high figures for this answer.

Activity 2

Assessment criterion (b)

Many candidates gave detailed explanations of the purpose and function of the portable electric fruit crusher, often including sketches and flowcharts. Some candidates failed to explain the basic function and operation of the system. A number of centre assessors were awarding marks from the higher mark band when candidates produced only brief explanation of the operation of the car fruit crusher. In these cases the moderating team reduced the marks awarded by the centre assessor.

Assessment criterion (c)

Candidates provided some good answers describing energy transfer within the system. Block diagrams included technical detail highlighting how sub-systems and components were interconnected. A number of candidates were awarded maximum marks by centre assessors for just providing a block diagram, with no written explanation of the construction and operation of the fruit crusher. The marks for these candidates were reduced by the moderating team.

Assessment criterion (d)

Many candidates produced different and unique design solutions to this task, but some failed to provide detailed explanations of how their designs would function and operate. A number of candidates produced written reports as a solution to this task, but did not provide any sketches/drawings of their ideas.

Activity 3

Assessment criterion (e)

Many candidates produced feasible and workable design solutions, with good explanations and block diagram/pathways demonstrating all system elements for this task. Some block diagrams, signal pathways and details of sensors/transducers used could have been explained in greater detail. There

were generally more detailed responses from candidates for this task than in previous years.

Assessment criterion (f)

Only a minority of candidates achieved maximum marks for this task. The majority of candidates achieved two or three marks. Very few candidates identified specific details of health and safety or production constraints. Some candidates lacked clear understanding of what is required for this activity.

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