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Moderators' Report/ Principal Moderator Feedback

Summer 2014

Pearson Edexcel GCE Engineering Unit 6934_01

Applied Engineering Systems

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UNIT 6934
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The students' performance covered the full range of the mark spectrum, from single figure to full marks. The majority of centres presented student work which aided moderation but there are still centres presenting work in ring binders, plastic presentation wallets etc. Students should be asked to use treasury tags in presenting portfolio evidence as this considerably aids moderation. A small number of centres are encouraging students to use answer booklets for each individual activity which considerably helps the moderating team.

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

Activity 1
Assessment Criteria (a)

(i) Most centres appear to have carried out the required test and students 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 students who failed to identify the material sample.

(ii) The graphs of stress versus strain seemed to cause most students few problems but there were a number who did not complete this activity. Students 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 students should be encouraged to use them in future examination series. Students 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 students. Again, the use of SI units was a problem with students not being able to access the full marks.

(iv) Calculations for this task were well answered by the students answering task (iii) correctly. A small number of students could not perform this calculation.

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

Activity 2

Assessment Criteria (b)

Many students gave detailed explanations of the purpose and function of the car ramp with detailed explanations including sketches and flowcharts. Some students 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 students produced only a brief explanation of the operation of the car ramp. In these cases the centre assessor mark could not be agreed by the moderator.

Assessment Criteria (c)

Students 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 students were leniently awarded maximum marks by the centre assessor for just providing a block diagram, with no written explanation of the construction and operation of the car ramp. Some students produced schematic/pneumatic diagrams instead of block/flowchart diagrams as to how the system was constructed with little or no evidence of energy transfer.

Assessment Criteria (d)

Many students 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 students produced written reports as a solution to this task, but did not provide any sketches/drawings of their ideas.

Activity 3

Assessment Criteria (e)

Many students produced feasible and workable design solutions with good explanations and block diagram/pathways for this task. Some block diagrams, signal pathways and details of sensors/transducers used could have been explained in greater detail. Some responses to the task were very weak and did not include any of the previous details.

Assessment Criteria (f)

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

Grade Boundaries

Grade boundaries for this, and all other papers, can be found on the website on this link:
http://www.edexcel.com/iwantto/Pages/grade-boundaries.aspx

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