

**NCFE Level 1/2 Technical Award in Engineering (603/2963/4)****Assessment Window: 25 November 2021****Paper Number: P001395**

This report contains information in relation to the external assessment from the Chief Examiner, with an emphasis on the standard of learner work within this assessment window.

The aim is to highlight where learners generally perform well as well as any areas where further development may be required.

Key points:

- Grade Boundary Information
- Administering the external assessment
- Standard of learner work
- Regulations for the Conduct of External Assessment
- Referencing of external assessment tasks
- Evidence creation
- Interpretation of the tasks and associated assessment criteria
- Planning in the external assessment.

It is important to note that learners should not sit the external assessment until they have taken part in the relevant teaching of the full qualification content.

**Grade Boundary Information**

Each learner's external assessment paper is marked by an Examiner and awarded a raw mark. During the awarding process, a combination of statistical analysis and professional judgement is used to establish the raw marks that represent the minimum required standard to achieve each grade. These raw marks are outlined in the table below.

<b>NYA</b>	<b>Level 1 Pass</b>	<b>Level 1 Merit</b>	<b>Level 1 Distinction</b>	<b>Level 2 Pass</b>	<b>Level 2 Merit</b>	<b>Level 2 Distinction</b>
0-18	19-23	24-28	29-34	35-43	44-52	53-80

Grade boundaries represent the minimum raw mark required to achieve a certain grade. For example, if the grade boundary for the Pass grade is 25, a minimum raw mark of 25 is required to achieve a Pass.

<b>Maximum UMS Score*</b>	<b>Level 1 Pass</b>	<b>Level 1 Merit</b>	<b>Level 1 Distinction</b>	<b>Level 2 Pass</b>	<b>Level 2 Merit</b>	<b>Level 2 Distinction</b>
160	24	47	70	92	115	138

*\* In order to ensure that levels of achievement remain comparable for the same assessment across different assessment windows, all raw marks are converted to a*

*points score based on a uniform mark scale (UMS). For more information about UMS and how it is used to determine overall qualification grades, please refer to the qualification specification.*

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## **Administering the external assessment**

The external assessment is invigilated and must be conducted in line with our Regulations for the Conduct of External Assessment. Learners may require additional pre-release material in order to complete the tasks within the paper. These must be provided to learners in line with our Regulations. Learners must be given the resources to carry out the tasks and these are highlighted within the Qualification Specific Instructions Document (QSID).

## **Standard of learner work**

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The external assessment was taken by learners who have had their entire learning experience on this course being affected by the covid pandemic. Learners who have sat the assessment have learnt through a turbulent period of lockdown, home learning and periods of isolation affecting the delivery of the course by centres. A number of learners were unable to sit the external assessment once again due to the impact of self-isolating.

The standard of learner work demonstrated a range of ability levels from higher level 2 achievers down the level 1 pass grade. It was clear that centres are focusing upon the recall of knowledge which was evident within all assessment papers marked to some level. Within the external assessment papers, it was clear that learners have not fully embedded learning taught by centres to enable them to demonstrate all assessment objectives within the external assessment paper.

Centres need to be mindful that when they are preparing learners that they are teaching all assessment objectives equally. The external assessment assesses learners' ability to recall knowledge, applying knowledge and understanding and analysing and evaluating knowledge and understanding. It was clear that within the three extended writing questions of the assessment learners did not demonstrate all three-assessment objectives equally.

Centres have access to resources online to help support teaching of all three assessment objectives.

## **Evidence creation**

Learners should use the space provided to answer questions. Where answers are typed or additional pages included, the learners name, centre number, centre name and task number must be clearly visible. The additional paper must then be securely attached to the workbook.

## Regulations for the Conduct of External Assessment

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### Malpractice

There were 2 instances of malpractice in this assessment window. The Chief Examiner would like to take this opportunity to advise learners that instances of malpractice (for example, copying of work from another learner) will affect the outcome on the assessment.

### Maladministration

No instances of maladministration were reported in this assessment window. The Chief Examiner would like to highlight the importance of adhering to the Regulations for the Conduct of External Assessment document in this respect.

### Responses of the tasks within the sections of the external assessment paper

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**Q1** Opening question multiple choice and was answered well by learners.

**Q2** Learners made the link between integrated circuits and the engineering discipline "Electrical engineering".

**Q3** In this question learner's chose "amp" as the correct unit out of 4 answers.

**Q4** Learners did not fully read this question and consequently their responses did not achieve full marks. Learners are asked to "describe" one workplace injury. Many of them correctly identified a workplace injury however did not go onto describe how it could have happened in a workplace scenario or how the injury would be treated.

**Q5** In this question learners accurately identified and applied the correct formulae to calculate the momentum of the bike. Learner's lost marks however by not accurately identifying the correct unit being kg m/s.

**Q6a** A range of answers were accepted here by learners. This question was well answered.

**Q6b** It was pleasing to see that Learners were able to differentiate between 2D and 3D dimensional drawings. Many learners correctly identified axonometric as the correct answer.

**Q7** A multiple choice question which was well answered by learners.

**Q8** In this question learners mostly identified one correct elastomer out of two responses.

**Q9** Many learners correctly identified that "automotive" was the correct engineering discipline. When learners moved onto explaining what a gearbox is used for many did not fully explain this and only were awarded one mark out of two for this part of the question.

**Q10** Many learners did not seem to fully read this question. Responses focussed upon software development and computer developments but did not address how these development's improved "engineering structures". This resulted in responses being limiting as learners ran out of appropriate knowledge to present and explain. A number of learners repeated the same knowledge in their written responses. These types of questions are designed to allow learners to demonstrate assessment objective's A01, A02 and A03. Within written responses learners need to be taught the importance of addressing all three assessment objectives to access higher marks in these questions.

**Q11a** Question was well answered by learner's showing their working out of the missing measurement.

**Q11b** Many learners accurately identified the correct name for the drawing feature.

**Q12** This question was well answered, and learners gave a range of responses relating to strength and hardness of the material stainless steel.

**Q13** A number of learners in this question did not convert the diameter to radius and therefore when calculating the volume substituted the radius with diameter resulting in calculating the incorrect answer for the volume of the cylinder.

**Q14a** A well answered question where "inches" and "feet" were correctly stated answers.

**Q14b** A well answered question where "dimension" was correctly stated.

**Q14c** When attempting this question most learners did not read the key words of "how" and "when" within the question. This led to students not correctly answering the three questions when they may have known the correct answer. Learners should be encouraged to highlight key words they read within the examination paper as this will help them focus on the detail in the question to achieve marks.

**Q15** A well answered question by learners where they correctly stated properties of concrete being strong and durable. However, many learners had the mis conception that concrete "rusts" rather than having better wearing characteristics. Many learners fell short of full marks here with this misconception.

**Q16** A well answered question where learners accurately identified the correct formulae and applied it to the question and showed their working out to achieve full marks on this question.

**Q17** Learners demonstrated a wide range of knowledge in this question on types of renewable energy production that would replace fossil fuels. Learners mentioned examples such as solar panels, wind turbines and hydroelectric. Unfortunately, learners mainly addressed A01 knowledge and did not fully demonstrate the ability to apply their knowledge to the question and draw conclusions addressing A02 and A03.

**Q18** A multiple choice question where learners correctly identified "change in velocity" as the correct answer.

**Q19** A multiple choice question again well answered.

**Q20** A multiple choice question again well answered.

**Q21** A multiple choice question again well answered.

**Q22a** Learners answered this question well and identified the tool as a “spanner” and correctly described it as a tool which is used for tightening nuts and bolts.

**Q22b** Learner’s correctly identified a range of joining tools from glue gun to screwdriver.

**Q22c** This question was answered well at the beginning however in the second part of the question learners seemed not to have read and understood what was being asked of them. Learners correctly identified the tool however did not describe how it would be used. Most learners stated what the tool would be used for instead therefore not correctly answering the question.

**Q23a** A well answered question here where learners stated a range of materials including aluminium and stainless steel and a range of applications from mirrors to cutlery. All good answers that achieved high marks in this question.

**Q23b** Most learners were accurate in identifying materials which oxidise including materials such as mild steel and Copper. Learners were accurate in their linked responses relating to why preventing the material from oxidising is important also.

**Q24** When attempting this question learners both didn’t fully address the question and seemed to have misconceptions of subject knowledge relating to “telephone lines being replaced with fibre”. Some learners made good responses relating to how fibre lines can allow for faster data transfer and faster speeds. However, a number of learners started to discuss areas such as Wi-Fi and mobile phone networks which was not the focus of the question as they do not rely on fibre lines. Once again with this type of question learners did not fully address all the assessment objectives and many responses were lacking in applying the subject knowledge to the question they were given and drawing conclusions where they justified their thoughts. To enable learners to access both middle mark and high mark boundary grades learners need to have demonstrated equally all assessment objectives in their responses.

**Chief Examiner: Peter Groves**

**Date: 3<sup>rd</sup> February 2022**

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