

NCFE Level 1/2 Technical Award in Engineering (603/2963/4)

Assessment date: 19 March 2020

Paper Number: P001047

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:

- grading 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.

NYA	Level 1 Pass	Level 1 Merit	Level 1 Distinction	Level 2 Pass	Level 2 Merit	Level 2 Distinction
0	21	27	33	40	49	59

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.

Maximum UMS Score*	Level 1 Pass	Level 1 Merit	Level 1 Distinction	Level 2 Pass	Level 2 Merit	Level 2 Distinction
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.*

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

The external assessment was taken just before the lockdown due to Covid 19. As such some learners did not attend the external assessment due to isolation. The standard of learners work statistically performed well and in accordance with expectations. It would appear that centres are entering learners in year 11 (+15 years old) and then taking a re-sit in the following year.

The standard of work was varied and clearly demonstrated the high distinction achievers down to a Level 1 pass grade. Revision and using previous external assessment papers as mock tests for learners, will aid their knowledge and understanding of engineering principles. However, it is evident from learners answers that many have not had any engineering workshop experiences in gaining use and knowledge of engineering tools.

There appears to be an issue regarding centres not reading the instructions on the front of the external assessment paper. Learners are allowed the use of a calculator. Some learners are not using a calculator and therefore completing calculations using long hand manual methods.

Regulations for the Conduct of External Assessment

Malpractice

There were no reported 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

There were no occurrences of maladministration reported from this series. 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

- Q1** An opening multiple choice question that learners managed to answer well.
- Q2** Again this question performed well in settling learners early on in the paper.

- Q3a** Learners did not see that this is directed at employer's duties, rather than employees.
- Q3b** Learners lost marks by not appearing to have been shown how welding is conducted, using equipment and a 'welding mask' which stops flashes into the eye. Safety goggles or goggles stated wont provide adequate PPE for this application.
- Q3c** This answer requires that learners have some understanding of manual movement of items and the duties of employees.
- Q4a** Many learners managed to select oak as the correct answer.
- Q4b** Learners answered this question well in naming two thermal properties of a metal.
- Q4c** The majority of learners appeared to understand that stainless steel is a pure non-ferrous metal. Since it is made from iron this information needs to be made available to learners.
- Q5** Learners did not appear to know much about composite materials as they mentioned they were cheaper than traditional materials, which isn't correct in automotive engineering.
- Q6** A large amount of learners struggled to identify which of the given was not a property of aluminium.
- Q7** Many learners did not appear to understand the m^3 symbol and decided to use 0.25^3 instead within their calculations, which results in an error. Learners need to be taught about the metric units of measurement and how these are used in calculations.
- Q8** Learners made the mistake of entering the diameter from the question into the formula, rather than the radius.
- Q9** Learners did not appear to have been shown what a lathe was and its functions. Many selected milling as the answer. If centres don't have any engineering equipment then teaching delivery using YouTube is essential to demonstrate the range of engineering equipment used and its terminology.
- Q10** Random selections from learners often picked sustainability which is widely associated with the environment.
- Q11** Learners managed to associate kelvin as a measurement of temperature in selecting answer D.
- Q12** Learners often confused electrical with fibre optic, instead of integrated circuits, which reduced the maximum marks awarded.
- Q13** Learners managed to associate British Standard 8888 from the specification with drawing standards.
- Q14** Learners managed to associate photosensitivity with optical properties of a material.
- Q15** This question performed well in testing the definition of an oxidation state.

- Q16** Learners managed to compare the two excavators in terms of what was contained within the images, and extend this into what you could not see in terms of engineering knowledge, such as hydraulics.
- Q17a** A large amount of learners thought this was a coping saw and many used it to cut wood, which is not correct. Answers demonstrated that many centres were not delivering basic engineering practical's, as if this was the case learners would have instantly recognised a hacksaw and what it is used for.
- Q17b** Again, learners often did not know what a hacksaw was as displayed in the image. This suggests that some learners have not had any engineering workshop practical experience.
- Q18a** The question clearly asked for learners to name a "tool". Responses included items such as sandpaper, paint and beeswax, which are not tools. Again, this would indicate that there are no engineering practical workshop sessions been delivered at some centres.
- Q18b** This question was answered well by learners in terms of personal control measures to reduce the hazards from using and operating the pillar drill.
- Q19a** A well answered question that differentiated correctly.
- Q19b** Learners on the whole managed to interpret the drawing and calculate the height and length required. Credit was awarded for working out, which should be encouraged.
- Q20** Learners seemed to think that a scribe could be used to make a hole in metal prior to drilling, instead of using a centre punch. This would damage the scribe.
- Q21** For some reason learners placed a unit of measurement within here such as mm or cm. The question is asking what type of dimensions can be measured using a caliper, for example a diameter of a rod or bar.
- Q22** A reasonably well answered question, learners appeared to understand how mathematics is applied in an engineering context.

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