

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

Assessment date: 28 November 2019

Paper Number: P001046

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	34	41	50	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

This series the standard of learners work has improved as learners have learnt from the previous paper and have had revision materials to study against. Examination technique needs to be taught by centres in terms of making sure that learners place an answer against each question. Many learners left many of the response questions unanswered which doesn't then support the overall mark finally awarded. This is a missed opportunity for learners to gain valuable marks. Learners should be encouraged to attempt all questions.

Learners answered the mathematical elements of the paper correctly and selected the formula to use from the front sheet. Mathematical questions may be extended in future series.

Multiple Choice Question's performed well with learners answering correctly from the choices available, with many marks gained from this type of question.

Learners answered applied health and safety questions correctly in terms of responsibilities and PPE as control measures. The interpretation of dimensions confused some learners as all they had to do was read off the two features from the drawing title box.

The extended questions on aircraft technological advances was answered well with comparative statements in terms of the two images presented.

The interpretation of dimensions from drawings was not answered well. Learners did not grasp that they had to add up the dimensions from the drawing to find the overall width and length of the object. Errors were made in interpretation of a radius from the image.

A basic understanding of engineering tools and equipment was answered well with learners able to name the scribe and how it is used.

The results from this second series have demonstrated that the paper performed well and that the marks received followed the predicted statistical norm.

Regulations for the Conduct of External Assessment

Malpractice

There were no occurrences of malpractice reported from this series

Centres are reminded of the policy documentation that is available from the NCFE website. Learners must work independently under supervised examination conditions during the assessment window. All work must be retained within the room and secured during breaks. Learners must be reminded of the regulations during the start of the assessment tasks.

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 and the Qualification Specific Instructions for Delivery documents in this respect.

Referencing of external assessment tasks

Learners should use the answer booklet, using the space provided, to answer questions. Where answers are typed or additional pages included, the learner's name must be clearly visible and it must be clear which task the answer refers to. Learner's ID numbers must be clearly evidenced on all work along with the centre number in case any evidence becomes isolated.

Evidence creation

Learners need to be reminded that handwriting must be legible for an examiner to mark. Learners should be encouraged to request additional sheets, if they feel they need additional space, which should contain their name and registration number and be attached to the main paper.

Learners with assisted support needs provided typed answers on separate sheets.

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

Q1

Question was answered well with learners selecting the size of paper correctly from the choice available.

Q2

Learners recognised that an engineer should wear a breathing mask to prevent inhalation hazards.

Q3a

Responses included but were not limited to the responsibilities highlighted within the Health and Safety at Work Act and many learners also covered COSHH and RIDDOR responsibilities.

Q3b

Many learners struggled with this question and did not appear to have been shown a risk assessment as part of the delivery at centres.

Q3c

Three pieces of PPE were identified by most learners in terms of using an angle grinder and the sparks and heat that might be created in its use.

Q4a

Question was answered well with learners selecting the engineering ceramic correctly from the choice available.

Q4bi

Rust isn't a mechanical property which lost marks for learners. Many managed to name a mechanical property in terms of strength and durability.

Q4bii

Learners answered this with reference often to kitchen equipment and utensils.

Q5

Many learners distinguished between ferrous and non ferrous metals in terms of rusting, strength and finish. The depth of the comparison was often limited.

Q6

Question was answered well with learners selecting the *tensile resistant* correctly from the choice available.

Q7

This mathematical question was answered very well by learners with the correct selection of formula and calculation of the final answer. Centres are reminded to inform learners to show their working out in arriving at the answer.

Q8

This surface area calculation was worked out correctly by many learners using the simple formula for an area of a circle.

Q9

Question was answered well with learners selecting milling correctly from the choice available.

Q10

Question was answered well with learners selecting the *full size scale* correctly from the choice available.

Q11

Question was answered well with learners selecting *candela* correctly from the choice available.

Q12

Learners had to interpret a drawing title box and identify the scale and the tolerance. Many identified just the scale and missed the tolerance. Credit was given if learners only specified 1mm.

Q13

Question was answered well with learners selecting the *gear* correctly from the choice available.

Q14

Question was answered well with learners selecting the *method statement* correctly from the choice available.

Q15

Question was answered well with learners selecting the *definition of elasticity* correctly from the choice available.

Q16

Learners managed to compare the two images of aircraft in terms of technology. They produced explanations of the modern aircraft in some detail gaining valuable marks for the benefits of a modern aircraft.

Q17a

Learners managed to identify a scribe and what it is used for. Some advised that it was used for marking out wood.

Q17b

The description on how to use a scribe was limited and it may be that learners have never been shown how to use this basic engineering tool.

Q18a

Learners in the main, selected welding as the main thermal method of joining two metals together.

Q18b

Screws, nuts, bolts and rivets were the main answers provided for this question in how to mechanically join two pieces of metal together.

Q19

This question wasn't interpreted correctly. Learners did not appear to know that R stands for radius and that $15 + 45 = 60$ mm which is the length of the item. Many did not get this correct.

Q20

Sustainability was a weak topic that learners did not appear to have much knowledge about in terms of its application to engineering materials e.g. manufactured using recycled steel.

Q21

A difficult question that was given credit for the front, side and top views, but wasn't answered well by learners who did not appear to know about the two types of projection methods used.

Q22

A steel ruler was the main measuring tool specified by learners in gaining one mark.

Q23

Learners managed to name two materials, but often cast iron. This isn't a suitable material for an indoor aesthetic table. Many named aluminum or stainless steel which is appropriate. Cutting of materials included hacksaws, handsaws and angle grinders.

Q24

Some learners stated metric and imperial which isn't what the task is looking for. A range of different SI units were provided by the majority.

Q25

Learners were less confident with chemical technological advances with many turning to bio engineering. Learners often referenced to food and the shelf life of products using chemicals.

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