

Chief Examiner Report

**T Level Technical Qualification
in Healthcare Science
603/7083/X**

**Summer 2025 – Core Paper A and Core
Paper B**

Introduction

Summer 2025 – Core Paper A and Core Paper B

Assessment dates: Core Paper A – 11 June 2025
Core Paper B – 18 June 2025

Paper numbers: Core Paper A P002789 (paper-based)
Core Paper B P002790 (paper-based)

This report contains information in relation to the externally assessed component provided by the chief examiner, with an emphasis on the standard of student work within this assessment.

The report is written for providers, with the aim of highlighting how students have performed generally, as well as any areas where further development or guidance may be required to support preparation for future opportunities.

Key points:

- grade boundaries
- standard of student work
- responses to the external assessment questions
- administering the external assessment

It is important to note that students should not sit the core exams until they have received the relevant teaching of the qualification in relation to this component, and that both papers must be taken in any given series that a student sits the core exams.

Grade boundaries

Raw mark grade boundaries for the series are:

	Overall	Notional boundaries	
		Paper A	Paper B
Max	234	122	112
A*	189	96	92
A	166	83	83
B	143	71	71
C	120	59	59
D	97	48	48
E	74	37	37

Grade boundaries are the lowest mark with which a grade is achieved.

Students receive a grade for the core exam component as a whole, and although there are no official grades for the individual assessments in the core exam, it can be useful for students and teachers to see how the core exam grade was achieved. The grade boundaries given for each assessment are known as 'notional grade boundaries', as they are for illustrative purposes only. For further information on

notional grade boundaries, please see our guide T Levels: Notional boundaries for the Core Exam assessments (Paper 1 and Paper 2) available on the qualification page on the NCFE website.

For further detail on how raw marks are converted to uniform mark scale (UMS), and the aggregation of the core component, 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](#) document.

Students must be given the resources to complete the assessment, and these are highlighted within the [Qualification Specific Instructions for Delivery](#) (QSID) document.

Standard of student work

There was no change observed in the quality of written communication (QWC) seen across the Core A and Core B papers, compared to the previous series. The loss of marks on the extended-response questions (ERQs) was mainly attributed to the lack of technical content included in the student responses. Students continue to struggle to access the higher marks for these questions, mostly due to a failure to develop their points from AO1 into AO2 and AO3 responses. On certain questions, some students simply reiterated aspects of the question, without applying this information to the requirements of the question, hindering their opportunity to achieve higher marks.

On the Core B paper, some students performed well on the calculation questions, demonstrating strong mathematical skills. Where students did drop marks, this was mostly observed when they were asked to rearrange given equations and substitute values into them correctly. Providers should consider how they can support their students to develop and maintain these skills as part of exam preparation.

Across both core papers, a significant minority of students did not attempt all questions, including ERQs as well as the one-mark, AO1 recall questions. Providers are encouraged to remind their students of the importance of attempting all questions, particularly the ERQs, where multiple opportunities and routes to gain marks can be taken.

Further development in exam practice and techniques will continue to raise standards and approaches to the core knowledge and understanding presented in the core papers.

Responses to the external assessment questions

Below are some key conclusions from selected questions on student performance.

Core Paper A

Section A: the roles and responsibilities within healthcare science

Question 1: most students were able to state at least one purpose of equality, diversity and inclusion policies in the workplace. Responses were at times vague and very few students stated 'complying with legislation' as a purpose.

Question 2 (a): many students were able to make the link between the patient smelling of alcohol, potentially being intoxicated and therefore not fully able to understand the treatment they were about to have. Full marks were achieved when the student was able to go onto explain how this lack of understanding meant the patient would not have capacity to consent.

Question 2 (b): most students were able to identify two consequences of acting without consent. A common misconception was suggesting that acting without consent would be putting the patient at risk. There is always a level of risk with any procedure, irrespective of consent.

Question 3: some students could identify that the hospital had not respected Natalie's right to make choices about her own information and had therefore not maintained Natalie's trust. However, very few students identified from the question that the hospital had ensured Natalie's personal data remained confidential so had partially complied with the fundamentals of privacy. Further assessment is needed to achieve full marks on these AO3 questions.

Question 4 (a): some students struggled to state the benefits of using computer-aided design (CAD) in the healthcare science sector, suggesting a lack of familiarity with CAD and its uses.

Question 4 (b): similarly to Question 4 (a), where students struggled to access marks for this question this could suggest a lack of familiarity with computer-aided manufacturing (CAM).

Question 6: two routes could have been taken by students when responding to this question, with many students achieving marks by including points across both routes. Most students were able to identify that the advert was discriminatory. Where students lost marks was by not fully developing the consequence of the advert on the dental surgery. Further assessment is needed to achieve full marks on these AO3 questions.

Question 7: many students were able to identify the issue with the job advertisement and link this to potentially valid consequences for the dental surgery. Marks were commonly lost when students did not fully expand on the potential consequence. For example, a student may have stated that the dental surgery could be taken to court but has then not gone onto give the consequence of this (paying for legal proceedings, fines).

Question 8: some students were able to identify the appropriateness of the referral to secondary care, as well as suggesting that a referral to tertiary care may have been more appropriate. Where most students lost marks was by failing to fully explain the role of tertiary care.

Question 9: this is the first extended-response question (ERQ) on the paper. Some students were able to demonstrate knowledge of the types of registration, the role of accreditation and the purpose of performance reviews in the healthcare science sector, with many confidently identifying that The Health and Care Professionals Council (HCPC) registration is not voluntary. Very few students were able to adequately evaluate Oscar's statement that registration is voluntary and of little value in the workplace, limiting the marks they could access.

Section B: personal and patient safety

Question 10: some students were able to correctly state one step that could be taken to reduce electrical waste. However, a common incorrect response referred to turning equipment off when not in use, highlighting a potential misconception in this area.

Question 11: many students struggled to state purposes of the guidelines produced by the Resuscitation Council (UK). Some students seemed to believe this question was linked to Question 10 as their responses referenced electrical waste.

Question 12: this three-part question asked students to explain one potential consequence of using the air flow cabinet for John, the patients and the microbiology laboratory, respectively. Although many students could explain potential consequences, some gave consequences for the wrong group (for example, giving a consequence for the patients when asked to explain a consequence for John). Students should be reminded to fully read the question to ensure they are providing a suitable response.

Question 13: many students could identify the benefit of purchasing appropriate racks to store chemicals over purchasing more warning signs when there are spillages. Where most students lost marks was not suggesting an investigation into the root cause of the increased number of spillages. Further assessment is needed to achieve full marks on these AO3 questions.

Question 14 (a): only a small number of students could state one purpose of the Hazardous Waste (England and Wales) Regulations 2005

Question 14 (b): akin to Question 14(a), only a small number of students could state purposes of the Special Waste Regulations 1996. Both regulations are included in the specification for this qualification and students should be familiar with them.

Question 15: some students could identify that anatomical waste should be sent for incineration to prevent environmental contamination, and the facility could receive fines for incorrect disposal of waste.

Students lost marks for failing to fully explain the potential consequences, with many just stating consequences instead.

Question 16: this two-part question asked students to discuss one potential implication for Jacob and for Jacob's employer, respectively. Many students were able to identify valid consequences for both, with some developing their points and achieving more marks. A few students mixed up the consequences, for example discussing a consequence for Jacob's employer when the question asked for a consequence for Jacob. Students should be reminded to read each question carefully to ensure they respond appropriately.

Question 17: this ERQ saw many students able to demonstrate knowledge and understanding of single-use and multiple-use products, with some students able to apply this knowledge to the scenario within the question. Very few students were able to adequately evaluate Noah's recommendation to stop use of single-use products, limiting the marks they could access.

Section C: data handling and confidentiality

Question 20: most students struggled to explain a benefit of combining focus groups and questionnaires to collect data. Providers may benefit from reviewing how they deliver this part of the specification and how they could get students to investigate combining data collection methods and the benefits of this.

Question 21: two routes could have been taken by students when responding to this question, with many students achieving marks by including points across both routes. Although some students achieved marks for identifying that moving to digital notes would increase security of patient data, they did not explain that this could only be maintained with the use of a login and did not resolve the issue of patient data still being accessed in a public area. Further assessment is needed to achieve full marks on these AO3 questions.

Question 22: this two-part question asked students to explain one format that could be used to present findings to a group of 120 midwives and 20 expectant mothers, respectively. Some students could provide a format, but most were then unable to adequately explain why their chosen format would be suitable.

Question 23: of all ERQs on the paper, students performed poorest on this question. This may suggest a lack of knowledge and understanding of how new technology is applied in the recording and reporting of information and data.

Section D: regulatory and professional frameworks

Question 24: most students were able to state at least one potential impact of not regularly cleaning and preparing work areas for use.

Question 25: some students were able to state two reasons why it is important for Juan to use standard operating procedures (SOPs) but many failed to fully explain these reasons. Students may benefit from completing exam-style questions that allow them to familiarise themselves with the different command words included in the question papers. This will give students more opportunity to access higher marks, especially on AO2 and AO3 questions.

Question 26: some students were able to partially discuss potential consequences but did not fully develop their responses limiting the marks they were able to access.

Question 27: this ERQ had the highest average score of the ERQs across the paper. Some students were able to demonstrate knowledge and understanding of good manufacturing practice (GMP), as well as being able to apply this knowledge to the scenario. Very few students were able to effectively evaluate the auditor's conclusions that the pharmaceutical company were not to blame as they were generally complying with GMP.

Core Paper B

Section A: biology

Question 1 (a): most students could state one piece of equipment that can be used to measure a person's maximum rate of expiration.

Question 1 (b): many students were able to identify that a maximum rate of expiration of 300 litres per minute is outside the normal range and suggests that the adult in the question should arrange to see their GP. Few students were then able to explain why the adult should see their GP.

Question 2 (a): most students were able to provide an appropriate definition for the term 'trauma'. Providers are reminded that definitions for all key terms are included in the specification for this qualification.

Question 2 (b): many students could explain that an increase in heart rate combined with a fall in blood pressure can indicate ischemic shock. Students lost the mark by failing to link the skin bruising to potential internal bleeding.

Question 2 (c): many students were able to state one stage of the involuntary inflammatory response to trauma.

Question 3 (a): some students correctly calculated the actual diameter of the alveolus using the magnification equation formula provided. Where students commonly lost marks were by incorrectly rearranging the formula or through the incorrect conversion of units.

Question 3 (b): most students could state one symptom of chronic obstructive pulmonary disease.

Question 3 (c): some students were able to partially explain how ruptured alveoli can lower the oxygen saturation of the blood. Students should be encouraged to use key terms such as 'rate of diffusion' and 'surface area' in these contexts to access all marks available.

Question 4: most students could state two components of the digestive system.

Question 6 (a): many students were able to calculate the increase in blood glucose levels per minute. A small number of students multiplied 3 mmol/L by 60 minutes rather than dividing 3 mmol/L by 60 minutes.

Question 7 (a): some students were able to state one disease caused by a coronavirus. However, several students listed symptoms instead.

Question 7 (b): two routes could have been taken by students when responding to this question, with many students achieving marks by including points across both routes. Some students were able to surmise that identifying the cause of the disease as soon as possible would be essential if the disease is serious. Few were able to go on to suggest that knowing the cause of the disease could lead to appropriate treatments being put in place more quickly. Students did not use the information within the question about the country having limited healthcare resources and funding. Students should be encouraged to utilise the information given in questions to support their assessment and response to AO3 questions.

Question 9: this ERQ had the highest average score of the ERQs across the paper. Many students demonstrated a knowledge and understanding of blood pressure, factors affecting it and health promotion, with some able to apply this knowledge to the scenario in the question. However, few students were able to evaluate the potential impact of the nurse's suggestion, limiting the marks they could access.

Section B: physics

Question 10: many students were able to state the difference between alternating current and direct current.

Question 11 (b): some students could calculate the percentage increase in strength of the electromagnet when the number of coils is increased from 20 to 25. However, it was clear that some students were not familiar with calculating percentage increase.

Question 12 (b): many students were able to use the provided equation to calculate current. A small number of students multiplied 20 Coulombs by 5 seconds rather than dividing 20 Coulombs by 5

seconds, suggesting they incorrectly rearranged the equation provided or substituted the values into the wrong places in the equation.

Question 13: many students demonstrated an understanding of the uses of both types of scanning techniques and attempted to apply this to the scenario within the question. Where students lost marks was by not providing a balanced argument, which could have taken two routes. Either by stating how x-rays are better at visualising dense structures, or by concluding that the safest form of scan is the one which most accurately diagnoses the problem. Further assessment is needed to achieve full marks on these AO3 questions.

Question 14: despite many students being able to identify that the magnetic field of a magnet is strongest at its poles, few students were able to develop this further to fully assess the validity of the suggestion in the question.

Question 15: for this ERQ, many students were able to demonstrate a knowledge and understanding of radiation and half-life, with some students able to apply this knowledge to the information provided in the question. Very few students were then able to evaluate the validity of the students' conclusions.

Section C: chemistry

Question 16 (a): many students could state the correct pH range of an acidic solution.

Question 16 (b): many students could identify properties of acids, but few were then able to explain why their identified properties make it necessary to wear appropriate personal protective equipment when using them.

Question 18: most students were unable to assess the potential for using gas chromatography to screen samples of urine from athletes for the presence of a new performance enhancing substance. As seen in previous series', students typically struggle with chromatography questions suggesting the need for additional support during content delivery and exam preparation.

Question 19: for this ERQ, many students could demonstrate knowledge and understanding of collision theory and factors affecting the rate of reaction, with some students able to apply this knowledge to the conclusions in the question. However, few students were able to fully evaluate the validity of the conclusions.

Section D: biology, chemistry and physics

Question 20: for this ERQ, several students were able to demonstrate a knowledge and understanding of the role of the thyroid gland and Graves' disease, and the properties of gamma and beta radiation and their effect on human cells. Some students were able to apply their knowledge to the scenario in the question, while very few could effectively evaluate the validity of the statement in the question.

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