T Level Technical Qualification in Healthcare Science

Occupational specialism assessment (OSA)

Assisting with Healthcare Science

Assignment 4

Assignment brief

v1.1: Additional sample material
21 November 2023
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Contents

Guidance for students

Student instructions

- read the task briefs carefully before starting your work
- you must work independently and make your own decisions as to how to approach the tasks within the extended written tasks
- you must clearly name and date all of the work that you produce during the supervised session
- you must hand over all of your work to your tutor at the end of the supervised session

Student information

- the maximum time you will have to complete all tasks for this extended written assessment is 2 hours:
    - it is recommended that you should dedicate 10 minutes to read the materials provided in the assignment brief insert
    - it is recommended that you should then read all the tasks and split your time accordingly, planning time to check your work
- at the end of the supervised session, your tutor will collect all assessment materials before you leave the room
- you must not take any assessment materials outside of the room (for example, via a physical memory device)
- you must not upload any work produced to any platform that will allow you to access materials outside of the supervised sessions (including email)
- you can fail to achieve marks if you do not fully meet the requirements of the task, or equally if you are not able to efficiently meet the requirements of the task

Plagiarism

Copying may result in the external assessment task being awarded a U grade. For further guidance, please refer to the relevant guidance on plagiarism.

Presentation of work

- clearly show where sources have been used to support your own ideas and opinions
- clearly reference all sources used to support your own ideas and opinions, including any quotations from websites
- any work not produced electronically must be agreed with your tutor, in which case the evidence you produce should be scanned and submitted as an electronic piece of evidence
- all of your work should be clearly labelled with the relevant task number and your student details, and be legible (for example, front page and headers)
- electronic files should be given a clear file name for identification purposes – see tasks for any relevant naming conventions
- all pages of your work should be numbered in the format page X of Y, where X is the page number and Y is the total number of pages
- you must complete and sign the assessment cover sheet (ACS) and include it at the front of your assessment task evidence
- you must submit your evidence to the supervisor at the end of the supervised session

Extended written task 1: maintenance of complex medical equipment

Scenario

You are working as a healthcare science assistant (HCSA) within the medical physics and clinical engineering department.

Your role is to support the healthcare scientists / clinical scientists whilst they perform routine maintenance and checks on diagnostic ultrasound. The ultrasound machine maintenance is performed by an external engineering contractor. Your team are responsible for daily routine checks of the ultrasound machine and must ensure they follow all health and safety associated with it.

Task

Discuss the importance of adhering to an ultrasound machine maintenance schedule. You should consider how medical ultrasound operates when being used on patients and the risks associated with both patients and clinical staff working in this environment when maintenance schedules are not maintained.

Give some examples of how regular maintenance of complex medical equipment can limit risk. Consider the frequency of maintenance and the elements of the equipment requiring checks, as well as how you would react to an issue or concern.

(20 marks)

Record your response here:

Extended written task 2: testing equipment calibration

Scenario

You work with a biomedical scientist (BMS) in the biochemistry laboratory that works closely with the urology department laboratory in the testing of urine samples. One of the tests is a pH test using a pH meter for the diagnosis and assessment of urinary conditions, such as kidney stones and other kidney-related conditions. The biochemistry department is responsible for the calibration of this equipment.

Produce a report outlining the calibration process of the pH meter. In this report you should include the actions to be taken as a result of the calibration and the reasons why these actions would be taken.

Task

Analyse the importance of calibrating a pH meter appropriately.

In your answer you should use your knowledge to discuss the steps in calibrating a pH meter. You should also discuss the need for calibration in the laboratory, the need for timely calibration of equipment and the consequences that could occur when calibration is not completed appropriately.

(20 marks)

Record your response here:

Extended written task 3: escalation of issues related to equipment

Scenario

You are a healthcare science assistant (HCSA) working on point of care testing. Your team are working within a cancer ward collecting urine samples from all patients currently staying overnight.

Your colleagues bring you the samples they collect, and your role is to organise them according to their labels. You need to check that the samples are accurately labelled, meet labelling requirements and show patient details and the testing required.

One of the samples that arrives to you for labelling shows evidence of needing further investigation within a clinical laboratory. This is because the sample has an unexpected colour and appears to be cloudy. However, the sample is in the incorrect container and does not meet the standard expected for labelling within the hospital.

Task

Discuss the steps taken to escalate this issue.

In your answer you should discuss what you would do with the sample, and what you would do to escalate this issue.

(20 marks)

Record your response here:

Extended written task 4: research and innovation

Scenario

You are a healthcare science assistant (HCSA) working in a team on preventative research. Your team have undertaken the first stages of a research study on the effectiveness of 2 different hand soaps (A and B). The study's aim is to identify which hand soap most effectively reduces infections so it can be used on all wards within the hospital. Both samples of hand soap are authorised and branded to use within hospitals and have been tested to reduce levels of Methicillin-resistant Staphylococcus aureus (MRSA).

The results of the first stages of the research are shown below.

Figure 1: Results table to show a comparison between the MRSA cases in the wards with Hand soap A and Hand soap B.

Hand soap A		
Ward Number	Number of patients admitted (over 3 days)	Number of MRSA cases that arose (within the same 3 days)
1	28	6
2	4	0
3	162	14

Hand soap B		
Ward	Number of patients admitted (over 3 days)	Number of MRSA cases that arose (within the same 3 days)
1	62	2
2	18	1
3	14	0

Two members of staff working on these wards have given statements about the research.

Staff member 1 – ward 2 using hand soap A, and wards 2 and 3 using hand soap B at different times during the research and is involved with the research project: 'I feel the project is working as I have seen barely any patients presenting MRSA symptoms since we started using the hand soaps on the wards.'

Staff member 2 – ward 3 using hand soap A only: 'My colleagues on my ward have said that they are not sure if the hand soap being used is any better than the one we used before the research project was started.'

Task

Produce a report of the research so far to present to the nurse who is leading this piece of research. This report should summarise the initial findings and evaluate and validate the study that has been completed in this first stage. In this validation and evaluation, you should consider the data provided from the first stage of the research and the statements of the 2 nursing staff that have also been provided. This summary of the research is being given to the research project's lead nurse. The project will need re-approval from the Health Research Authority (HRA) partly based on the validation and evaluation you provide in your report.

In this report you should consider:

- what information is required and is currently not provided, such as:
  - staff involvement
  - patient involvement
  - key data of the research project
- whether ethical issues have been addressed
- the language you use to summarise the report
- the formatting and sections to include in the report (for example, title, purpose)
- validation of the research based on the provided data
- evaluation of the research so far
- the staff statements and whether they provide fact, opinion or bias
- re-approval of research from the HRA

(20 marks)

Record your response here:

Document information

The T Level Technical Qualification is a qualification approved and managed by the Institute for Apprenticeships and Technical Education. NCFE is currently authorised by the Institute to develop and deliver the T Level Technical Qualification in Healthcare Science.

Owner: Head of Assessment Design

Change History Record

Version	Description of change	Approval	Date of issue
v1.0	Additional sample material		01 September 2023
v1.1	Sample added as a watermark	November 2023	21 November 2023