

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

Paper A Elements 1–10

Paper number: **P002396**Time allowed: **2 hours 30 minutes**Assessment date: **Wednesday 6 December 2023**Time: **9:00am – 11:30am****Student instructions**

- Use black ink.
- Fill in the boxes at the bottom of this page.
- Answer **all** questions.
- Read each question carefully.
- You **must** write your responses in the spaces provided. There may be more space than you need.
- You may do rough work in this answer book. Cross through any work you do not wish to be marked.

Student information

- The marks available for each question are shown in brackets. This is to help you decide how long to spend on each question.
- The maximum mark for this paper is **122** including QWC.
- In questions **9, 17, 22** and **28**, you will be assessed on the quality of your written communication (QWC) and use of specialist terminology.
- You may use a calculator.

Do not turn over until the Invigilator tells you to do so.**Please complete / check your details below**

Student Name:

Provider Name:

Student Number:

Provider Number:



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Section A: The roles and responsibilities within healthcare science

This section is worth **34** marks, plus **3** marks for quality of written communication (QWC) and use of specialist terminology.

Answer **all** questions in the spaces provided.

- 1** Identify **two** purposes of pharmacy services in the healthcare science sector. **[2 marks]**

- 2** List **two** features of Making Every Contact Count (MECC). **[2 marks]**

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3 Charlie works in a prosthetics department, creating prosthetic lower limbs for patients.

Explain how **two** of the services the prosthetics department provides are beneficial to their patients.

[4 marks]

4 George, aged 45, has been unemployed for several years. He previously worked as a gardener and has an interest in conservation. George has been experiencing some mental health difficulties. His general practitioner (GP) has contacted local relevant services in the community to include social prescribing as part of his treatment plan.

Justify why the GP has taken this action.

[3 marks]



5 Sebastian is a 24-year-old male who believes he may have broken his arm after a fall. He decides to ring 111.

Explain **one** reason why Sebastian has chosen to ring 111 rather than go to an NHS Urgent Treatment Centre (UTC).

[2 marks]

6 Amelia visited her GP as she had blood in her urine. This did not clear up or stop after being prescribed and taking antibiotics. Her GP then sent Amelia for an urgent referral.

Explain **one** reason why Amelia may require an urgent referral.

[2 marks]



7 You are working in a rehabilitation clinic with patients who have difficulty in understanding verbal instructions, due to a variety of illnesses and disabilities.

Explain **two** examples where a patient's needs may require a specific form of communication and how to accommodate them.

[4 marks]

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9 Safia and Ayesha are women employed as technicians in a spinal injury unit. In a recent performance review, they were rated as “unacceptable” by their manager. The other members of the team told Safia and Ayesha that the work they produced was of high quality.

Discuss how the use of internal policies may help Safia and Ayesha attempt to ensure their treatment is fair.

Your response should be supported by the Equality Act 2010 and employment legislation and their use in producing and implementing workplace policies and procedures.

Your response must include reasoned judgements.

[9 marks, plus 3 marks for QWC]



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Section B: Personal and patient safety

This section is worth **34** marks, plus **3** marks for quality of written communication (QWC) and use of specialist terminology.

Answer **all** questions in the spaces provided.

10 State **two** functions of the Serious Hazards of Transfusion (SHOT) haemovigilance scheme. **[2 marks]**

11 You are working on a hospital ward, and witness a doctor giving a patient morphine. Morphine is a controlled drug used to relieve pain in patients.

Explain **two** ways the Misuse of Drugs Act 1971 allows morphine to be used on the ward but prevents it being generally available. **[4 marks]**



12 An employer has created a check list to help ensure compliance with the Health and Safety (Display Screen Equipment) Regulations 1992. This is the checklist:

- The main monitor is central to the user’s desk and about one arm’s length away in distance.
- The user faces the screen when sitting in a neutral position.
- The monitor is free from glare and does not flicker.
- The user’s eyes are at the top of the screen.
- The user’s head, neck and shoulders are straight and relaxed.

Explain **two** ways that the checklist created by the employer could be used to ensure that they are compliant with Health and Safety (Display Screen Equipment) Regulations 1992.

[4 marks]

13 There are a range of ways in which infection control is managed in healthcare science settings including through a dress code.

State **two** inclusions within a dress code that may reduce infection.

[2 marks]



14 A hospital workshop produces large quantities of metal and electrical waste.

Explain **one** way in which workshop employees can be encouraged to recycle this waste.

[2 marks]

15 You are working in a specialised workshop that repairs and services electronic equipment used in hospitals. You need to ensure that your workstations and equipment, brought into and taken out of the workshop, are suitably decontaminated.

Assess **one** method used for decontamination and effective infection control for:

- (i) workstations
- (ii) and **another** method used for equipment.

[6 marks]



16 (a) State **two** purposes of the Health and Care Act 2022.

[2 marks]

Sebastian is an elderly gentleman who wishes to live independently but is having difficulty moving around in his home and garden due to a progressive illness that affects his mobility and hand function.

(b) Assess how the Health and Care Act 2022 ensures Sebastian is supported by his local authority.

[3 marks]



17 The Health and Safety at Work etc. Act 1974 and subsequent health and safety legislation, defines employees' duties to protect themselves and each other and, identifies the actions employers must take to maintain high levels of health and safety.

A health and safety audit in your Healthcare Science Department has identified several breaches of health and safety legislation including the correct storage of materials, the maintenance of safe passageways, use of personal protective equipment and the correct procedures in manual handling.

Discuss how active employer and employee engagement can improve health and safety in your department and ensure that your department is compliant with health and safety legislation.

Your response must include reasoned judgements.

[9 marks, plus 3 marks for QWC]



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Section C: Data handling and confidentiality

This section is worth **21** marks, plus **3** marks for quality of written communication (QWC) and use of specialist terminology.

Answer **all** questions in the spaces provided.

18 State **one** potential risk when using IT systems to store information. **[1 mark]**

19 You are working as a clinical scientist in a hospital department and you believe a member of staff in this unit may be sharing unauthorised information online.

(a) Explain **one** suitable process by which you could escalate your concerns. **[2 marks]**

You are sending patient details to a colleague in a clinical research unit and you realise you have sent an email to the wrong colleague from a different department.

(b) Explain **one** suitable action that you would take. **[2 marks]**

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20 One research method to collect data for an investigation could be to access historical patient data sourced from patient records. You are investigating the incidences of whooping cough (pertussis) in previously vaccinated children and adults.

Assess the use of this method for obtaining data.

[3 marks]

21 Your department has acquired a research grant, however, one of the conditions of this grant is that you should share this information with the wider healthcare community, both nationally and internationally.

Explain **two** impacts of using social media to improve the research profile of your department externally.

[4 marks]



22 You have been asked to look into the perceptions of assistive walking devices, prescribed from your department. The data you will be using is to be based on opinions from patients, carers, healthcare workers and other hospital staff.

The following are possible qualitative data collection techniques to improve patients' experiences in the provision of assistive walking devices:

- focus groups
- open question surveys
- closed questions
- surveys
- interviews.

Discuss the suitability of collection techniques above as a method to collect data to improve patients' experiences in the provision of assistive walking devices.

Your response must include reasoned judgements.

[9 marks, plus 3 marks QWC]



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Section D: Regulatory and professional frameworks

This section is worth **21** marks, plus **3** marks for quality of written communication (QWC) and use of specialist terminology.

Answer **all** questions in the spaces provided.

- 23** State **two** quality management policies and procedures that facilitate continuous service improvement in hospital departments. **[2 marks]**

- 24** You are checking cleaning procedures in your sample analysis laboratory and notice that some work areas are not being regularly cleaned and prepared for use.

Explain how a lack of regular cleaning may affect the validity of the samples in a sample analysis laboratory.

[2 marks]

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25 You are working in a vaccine storage facility and you discover that some vaccines have been stored at the wrong temperature.

Assess how this may impact on the quality of these vaccines.

[3 marks]

Please turn over for the next question.



26 You are working in a wheelchair workshop that stores manufacturing materials and chemicals. You realise that due to poor stock management, both structural materials and chemicals are out of date.

Assess how poor stock management could affect manufacturing process.

[3 marks]

27 Explain **one** effective technique for monitoring the quality of service provision in a genetic material sampling facility.

[2 marks]



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28

You are working in a department which makes orthopaedic wrist supports that help people suffering from arthritis to complete daily activities.

Discuss how relevant aspects of good manufacturing practice can work alongside a robust system, enabling fault finding, and the rapid recall of products.

Your response must include reasoned judgements.

[9 marks, plus 3 marks for QWC]

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To be completed by the examiner			
Question	Mark	Question	Mark
1		19 (a)	
2		19 (b)	
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		TOTAL MARK	

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