



1. During drug development, trials are conducted to determine the therapeutic window.

(a) Explain the meaning of the term *therapeutic window* and discuss its importance in drug administration.

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(4)

(b) Explain the use of placebos in clinical trials on humans.

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(3)

(c) Identify **one** other effect of a drug which must be determined during clinical trials.

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(1)

(Total 8 marks)



2. Explain what is meant by the term *tolerance* and suggest why this is a particular problem for heroin users.

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(Total 2 marks)

3. Drugs can be prescribed for treating various diseases and assisting in healing the human body, however, any drug presents potential risks. The properties of three drugs are summarized below.

Drug	Physiological effect	Side-effects	Therapeutic window
A	high	severe	medium
B	moderate	moderate	narrow
C	low	minimal	wide

Suggest which drug (A, B or C) could be

- (a) considered safe enough to be taken by patients without supervision.

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(1)

- (b) administered **only** by qualified staff.

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(1)

- (c) used **only** in a medical emergency.

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(1)

(Total 3 marks)



4. Medicines and drugs alter the physiological state of the body including consciousness and coordination.

(a) State **one** other effect of medicines and drugs on the body.

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(1)

(b) Explain the meaning of the following terms:

(i) *therapeutic window*.

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(1)

(ii) *tolerance*.

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(1)

(iii) *placebo effect*.

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(1)

(Total 4 marks)



5. Outline the major stages in the development of a new drug.

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(Total 3 marks)

6. Medicines and drugs can influence the functioning of the body.

Discuss the term *therapeutic window*. Your answer should include its meaning, a quantitative description and an explanation of **wide** and **narrow** therapeutic windows.

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(Total 4 marks)

7. Explain the meaning of the terms:

(i) *side-effect*

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(1)



(ii) *therapeutic window*

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(1)

(iii) *placebo effect.*

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(1)

(Total 3 marks)

8. The effectiveness of a drug depends on the method of administration.

(i) One method of injecting drugs into the body results in the drug having a very rapid effect. State the method and explain its rapid action.

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(2)

(ii) List the **two** other methods which can be used to inject drugs into the body.

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(1)

(iii) Identify the method of administration used to treat respiratory diseases such as asthma.

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(1)

(Total 4 marks)



9. Many drugs are taken orally. State **three** other ways in which drugs may be taken by a patient.

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**(Total 2 marks)**