

Marking scheme – December 2022

Question 01

Amount of ipratropium bromide required for a single nebulization = 125 mcg = 125×10^{-3} mg (5)

Strength of ipratropium bromide nebulization solution = 0.25 mg/mL

Therefore, the volume of ipratropium bromide nebulization solution required to administer a single nebulization = $\frac{125 \times 10^{-3} \text{ mg}}{0.25 \text{ mg/mL}} = 0.5 \text{ mL}$ (5) or $0.25 \text{ mg/mL} \times 10^3 = 250 \text{ mcg/mL}$

Conversion - 5

Division - 5

Without unit - 09

With unit - 10

0.25 mg/mL

= 0.5 mL

(5)(5)

(20 marks for the correct answer with the calculation step

10 marks for the calculation step without correct answer)

$$\frac{1 \text{ mL} \times 125 \text{ mcg}}{250 \text{ mcg}} = 0.5 \text{ mL}$$

Question 02

2.1 1. Sterile 0.9% sodium chloride solution

2. Normal saline

3. Water for injection

0.9% Saline

without sterile (3)

↳ Deduct 2 marks.

sterile water.

purified water ✓

(5 marks for any one of these = 5 marks)

2.2 1. Easy to evaporate

, non-toxic

2. Sterile solution

3. Does not cause any damage to the drug of interest

No color, no smell.

4. Perfect mixing with the drug of interest

5. Non-toxic, non-irritant

→ 6. Isotonic.

(5 marks each for any three of these = $5 \times 3 = 15$ marks)

- Non irritant X.

Inert. No interaction. Compatible.

Question 03

3.1 1. Travels the drug directly into the respiratory tract avoiding the first pass metabolism.

2. Higher drug concentrations are achieved in the site of action

3. Fewer adverse side effects than when the systemic route is used

4. They take less training than inhalers to use correctly

5. More helpful and easier to use than an inhaler during a COPD attack

6. Easier to use for taking large doses of a drug

(2.5 marks each for any four of these = $2.5 \times 4 = 10$ marks)

3.2 1. Taking incorrect volumes of the drug and the diluent

2. Incorrectly wearing the mask

3. Practicing incorrect breathing patterns when using the mouth piece

Instrument / power failures

Poor education.

can be 2 separate answers

4. Poor cleaning of the machine
5. Loosely fitted tubing *Damaged instrument.*
6. Clogged or wet filters
7. Nebulization do not reach the appropriate required temperature

(2.5 marks each for any four of these = $2.5 \times 4 = 10$ marks)

Question 04

- 4.1 1. Jet nebulizer *(Pneumatic)*
2. Ultrasonic nebulizer
3. Mesh nebulizer

(2 marks each for any two of these = $2 \times 2 = 4$ marks)

- 4.2 1. Compressor
2. Nebulizer chamber / medicine cup
3. Mouthpiece / face mask
4. Tubing / hose
5. Connection to the power supply

Mesh nebulizer - Mesh.

(4 marks each for any four of these = $4 \times 4 = 16$ marks)

Question 05

1. Confirm that the prescription is correct and complete
2. Check for the right patient according to the prescription
3. Check for the correct medication/drug with the correct strength
4. Check for the correct dose to be inhaled with the times per day.
5. Check for the expiry date of the product
6. Beware of look-alike and sound-alike medicines
7. Get the dispensing items double checked by another pharmacist
8. Check if the label of the solution is correctly written and pasted

9. *Correct* patient instruction / *counselling* / *complete dispensing label*

(4 marks each for any five of these = $4 \times 5 = 20$ marks)

10. *Full concentration.*
11. *Valid prescription.*

780

$$\begin{array}{r} \sqrt{375} \\ 2 \\ \hline 750 \end{array}$$

37

documentary evidence

(Continued)

black redaction

to full satisfaction
of valid protection