

## External Pharmacists' Examination – August 2025

### Marking Scheme

1.1 Briefly describe the unit process 'drying'. (3 marks)

Drying is the process of removing moisture or solvent from a pharmaceutical substance or to achieve a desired final moisture content through the application of heat, vacuum, or airflow.

3 X 1 mark = 3 marks

1.2 State five (05) reasons for the importance of drying in pharmaceutical manufacturing (5 marks)

- I. To **enhance product stability** by reducing microbial growth and hydrolytic degradation/ to avoid deterioration on storage
- II. To **enhance product quality**
- III. To **reduce weight and bulk** for easier handling, packaging, and transportation/ size reduction
- IV. To prepare powders and granules for further processing, such as **tablet compression**.
- V. To improve **shelf-life** and **preservation** of formulations.

*reduce hydrolysis & degradation. 5 X 1 mark = 5 marks*  
*decreasing mo.*

1.3 State and outline the (03) main ~~steps~~ in the freeze drying (lyophilization) process. (6 marks)

1. The initial liquid solution or suspension is frozen/ is cooled to solidify all water content (freezing).
2. Pressure is reduced, and heat is applied to allow ice to sublimate directly into vapour (**Sublimation**)
3. Remaining bound water is removed by further increasing the temperature under

Reconstitution	Not requires <i>may or may not</i>	Needed
Temperature	Moderate to high/high	low

5 X 1.2 marks (0.6 + 0.6) = 6 marks

5EG. MCC  
2-36. 6

External Pharmacists' Examination – August 2025  
Marking Scheme

2.1 Briefly describe polymeric systems in drug delivery (5 marks)

Natural, semisynthetic or synthetic polymers that are used as carriers for drugs enable controlled, sustained, or targeted release to specific sites in the body. <sup>2</sup> <sup>3</sup> <sup>4</sup> <sup>5</sup>  
by incorporate drugs material into polymer systems

All 5 points or any acceptable answers (5 marks)

2.2 List five ideal properties of polymers used in drug delivery (5 marks)

- Biocompatible
- Non-toxic (not harmful to the body) only consider 1st five
- Stable increase stability X
- Easily processable into dosage forms / Ease of formulations
- biodegradable or bio erodible
- Capable of forming desired drug-release profiles/enhance drug delivery process

Any 5 X 1 mark = 5 marks

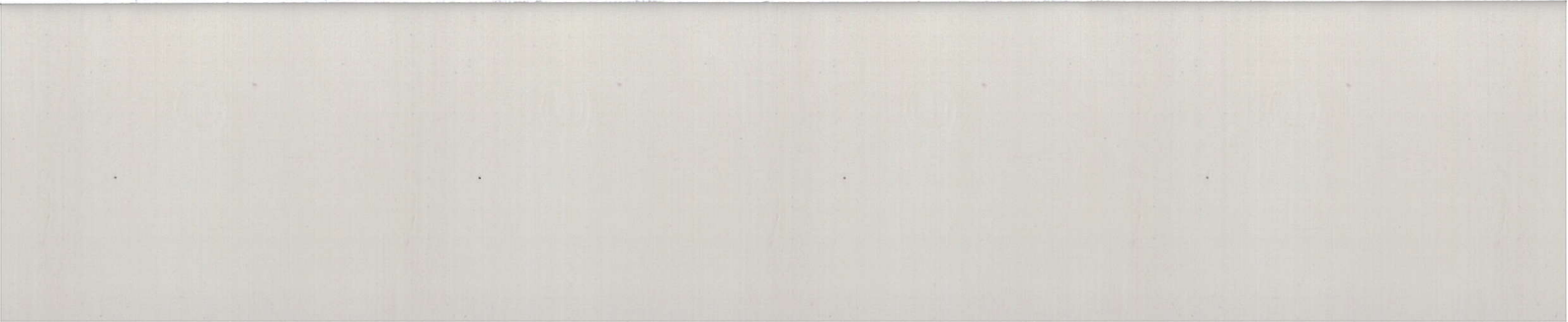
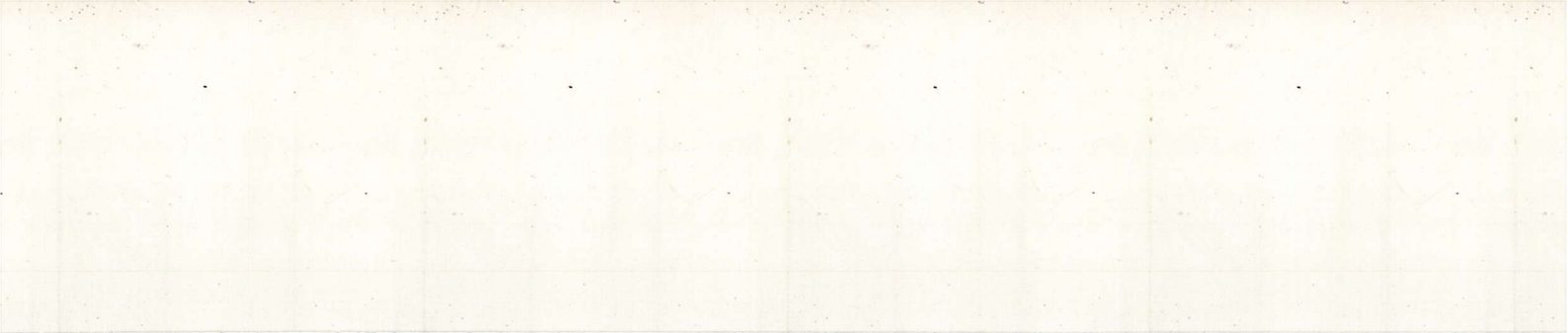
2.3 Explain why polymers are used in controlled drug delivery (5 marks)

- to regulate the rate, duration, and location of drug release.
- To improve efficacy, <sup>any release in controlled manner</sup> low cost X
- It reduces dosing frequency, <sup>↑ dosing interval</sup> carried drugs to target place
- Minimises side effects
- Improves patient compliance
- Increases the safety margin of high potency drugs
- Reduces fluctuation in the steady state level

Any 5 X 1 mark = 5 marks

2.4 State the applications of biodegradable polymers in drug delivery systems.

- Long-acting injectables
- <sup>any other acceptable answers</sup> <sup>facilitate absorption capacity</sup> <sup>use any drugs non-degradable in acidic medium</sup> <sup>two(2) examples of drug delivery systems based on drug plasma level</sup> <sup>long duration</sup>



External Pharmacists' Examination – August 2025  
Marking Scheme

3. Benzylpenicillin (Penicillin G) injection is available in a strength of 1 million units per mL. A patient requires a dose of 25,000 units per kilogram of body weight. How many milliliters should be administered to a patient weighing 64 kg? (20 marks)

Calculate total required dose:

$$25,000 \text{ units/kg} \times 64 \text{ kg} = 1,600,000 \text{ units} \quad \leftarrow 10$$

Calculate volume to administer:

$$1,600,000 \text{ units} / 1,000,000 \text{ units/mL} = 1.6 \text{ mL} \quad \leftarrow 10$$

⇒ 5 marks for units

mL per kg.

$$\frac{25,000 \text{ u/kg}}{1,000,000 \text{ u/mL}} = 0.025 \text{ mL}$$

for 64 kg.

$$= 0.025 \times 64$$

$$= 1.6$$



External Pharmacists' Examination – August 2025  
Marking Scheme

4.1. State four (04) types of information which can typically be found in a product information leaflet (PIL) for a medicine? (08 marks)

- medicine's name,
- uses, / *Indications*.
- dosage instructions,
- possible side effects,
- warnings and precautions,
- storage conditions, and
- instructions for use.

*4 x 2 = 8*

4.2. Briefly explain the importance of maintaining proper storage temperature of pharmaceuticals. (06 marks)

Maintaining the recommended storage temperature helps preserve the drug's stability, potency, and safety, preventing degradation and ensuring it works effectively. (1) (2) (3)

4.3. State the recommended storage temperatures/conditions of following.

- Insulin
- Amoxicillin suspension before reconstitution (6 marks)
- **Insulin:** Should be stored in the refrigerator (2–8°C)
- **Amoxicillin suspension:** room temperature *15 - 25 °C*



External Pharmacists' Examination – August 2025  
Marking Scheme

5.1. Which authority is responsible for maintaining the Register of Pharmacists?  
(5 marks)

The Sri Lanka Medical Council (SLMC)

SLMC - only mentioned - Not given the marks.  
CMC - Ceylon Medical Council - (Half marks - 2.5)

5.2. State two (02) suitable qualifications accepted for registration of pharmacists in Sri Lanka.  
(6 marks)

(a) Serving an apprenticeship for 2 years in accordance with the provisions of the Ordinance and thereafter obtaining a certificate of efficiency as a pharmacist issued by the CMCC after passing the exam conducted by the CMCC  
(b) Degree or diploma in pharmacy granted by any University established under the Universities Act, No 16 of 1978;

(c) Qualification in pharmacy granted by an institution outside Sri Lanka approved by the CMCC and thereafter passes a special examination held by the CMCC

\* Not mentioned or efficiency or proficiency (1.5) Internal Pharmacist (Proficiency) as Pharmacist.  
reduce to 0.5 full marks

5.3. Briefly explain three (03) conditions under which a pharmacist may be removed from the registry.  
(9 marks)

Disqualification (1.5)

- If the pharmacist becomes legally disqualified (e.g., loss of necessary academic qualifications, mental incapacity), this may justify removal. (1.5)

Non-compliance with Registration Requirements (1.5)

only first (02) or 03 answers

