



# Syllabus for the Third Country Qualification Route Equivalence Examination



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## 1.0 Introduction

The Third Country Route of access to the PSI Register of Pharmacists applies to qualified pharmacists who have obtained their qualification as a pharmacist from a non-European Union (EU) or European Economic Area (EEA) country, regardless of nationality. It involves a two part process;

Applicants are required to first apply to the PSI for qualification recognition. This process looks at whether your qualification meets the education, training and qualifications standards necessary to practice in Ireland. There are four stages involved in the recognition process. For more information, please consult the Pharmaceutical Society of Ireland website ([http://www.thepsi.ie/gns/Registration/Pharmacists and Pharmaceutical Assistants/First Time Registration /Non EU Trained Pharmacists /Stages of the TCQR Process.aspx](http://www.thepsi.ie/gns/Registration/Pharmacists_and_Pharmaceutical_Assistants/First_Time_Registration_/Non_EU_Trained_Pharmacists_/Stages_of_the_TCQR_Process.aspx)).

The information contained within this document relates to Stage 2 of the process, the equivalence exam.

This equivalence exam includes both a MCQ (multiple choice question) examination and an OSCE (objective structured clinical examination). The purpose of this equivalence examination is to assess the standard of training, education, examinations and qualifications of the applicant.

A candidate can only apply to sit the equivalence examination if they have already successfully completed Stage 1. For more information on this process, see the information booklet provided by the PSI, available from

([http://www.thepsi.ie/Libraries/RPB Registration/Information Exploratory Booklet FINAL\\_sflb.ashx](http://www.thepsi.ie/Libraries/RPB_Registration/Information_Exploratory_Booklet_FINAL_sflb.ashx)).

## **2.0 Structure of the Equivalence Examination**

There are two part to the examination

**2.1 Part 1:** This MCQ examination will comprise of 100 questions and candidates will be given 180 minutes to complete the examination with 15 minutes reading time prior to the start of the examination.

**2.2 Part 2:** The Objective Structured Clinical Examination (OSCE) is a performance-based test which allows for the standardized assessment of clinical and communication skills. There will be 12 stations in total that each candidate will be required to take. This will include both interactive stations, where the candidate will interact with a standardized patient and which will be assessed by examiners using standardized rating instruments, and written stations. Each station will last for 5 minutes; this will be followed by a short transition time between stations. For all stations, candidates will receive clear instructions on what the station involves.

### **3.0 Standard Setting Procedures**

#### **3.1 Part 1**

The pass mark for the MCQ examination will be determined using statistical methods as approved by the appointed external examiners.

#### **3.2 Part 2**

The overall pass mark for the OSCE will be calculated as the average mark obtained from each of the 12 stations. Candidates are not required to pass each station independently. The written stations of the OSCE have a pass mark of 50%. The pass mark (standard setting) for the interactive stations will be determined using statistical methods as approved by the appointed external examiners.

Candidates will be required to pass Part 1 and Part 2 of the equivalence examination independently.

## 4.0 Syllabus

### 4.1 Content

The PSI requires that the education and training in the course of training for pharmacists shall at least cover the following subjects: plant and animal biology, physics, general and inorganic chemistry, organic chemistry, analytical chemistry, pharmaceutical chemistry including analysis of medicinal products, general and applied biochemistry (medical), anatomy and physiology, medical terminology, microbiology, pharmacology, pharmacotherapy, pharmaceutical technology, toxicology, pharmacognosy, legislation and the law generally pertaining to pharmacy and medicinal products and to the practice of pharmacy in the State, and professional conduct and ethics for a person practising as a pharmacist in the State (taken from Pharmaceutical Society of Ireland (Education and Training) Rules 2008, S.I. No. 493 of 2008). The Indicative Syllabus contained with the Five Year Programme Accreditation Standards (2013) addresses the following areas: The Patient; Health care systems and the roles of professionals; The wider context; Human and Veterinary Medicines: drug action; Human and Veterinary Medicines: the drug substance; Human and Veterinary Medicines: the medicinal product. More information is available from:

<http://www.thepsi.ie/Libraries/Consultations/Five Year Programme Accreditation Standards FINALinPrinciple 220114.sflb.ashx>

### 4.2 Skills and Attitudes

The Core Competency Framework (CCF) for Pharmacists 2013 (available from [http://www.thepsi.ie/libraries/publications/psi\\_core\\_competency\\_framework\\_for\\_pharmacists.sflb.ashx](http://www.thepsi.ie/libraries/publications/psi_core_competency_framework_for_pharmacists.sflb.ashx)) will be the guiding document from which the skills and attitudes assessed during the equivalence examination will be drawn from. Candidates should familiarise themselves with the CCF, the six domains contained within and the associated behaviours as follows:

- Domain 1 – Professional practice;
- Domain 2 – Personal skills;
- Domain 3 – Supply of medicines;
- Domain 4 – Safe and rational use of medicines;
- Domain 5 – Public health;
- Domain 6 – Organisation and management skills.

## **5.0 Scope of the equivalence examination**

### **5.1 Part 1**

The MCQ examination will comprise of 100 questions and will cover the following areas

- Pharmaceutical Calculations – 25 questions
- Clinical Pharmacology – 25 questions
- Basic Sciences and Properties of Medicines – 25 questions
- Pharmacy Practice – 25 questions

Essential supplementary information (e.g. pharmacokinetic equations, periodic table, constant values) will be provided as an appendix to the examination paper.

### **5.2 Part 2**

The OSCE assessment will assess the candidate's ability to integrate skills with clinical knowledge and measures a candidate's communication and interpersonal skills.

## 6.0 Preparation for the Examination

### 6.1 Sample Questions for Part 1

Pharmaceutical Calculations (5 sample questions) (Non-programmable calculator use is permitted)

1. A tablet containing 300 mg of ferrous sulfate is equivalent to which of the following masses of elemental iron?
  - a. 55 mg
  - b. 110 mg**
  - c. 165 mg
  - d. 300 mg
  
2. A medication order for a patient weighing 154 lb calls for 0.25 mg of amphotericin B per kg of body weight to be added to 500 mL of 5% dextrose. If the amphotericin B is to be obtained from a constituted injection that contains 50 mg/10 mL, how many millilitres should be added to the dextrose injection?
  - a. 3.5 ml**
  - b. 7.0 ml
  - c. 14.0 ml
  - d. 15.0 ml
  
3. If 50 mL of a 1:20 w/v solution are diluted to 1000 mL, what is the ratio strength (w/v)?
  - a. 1 : 40
  - b. 1 : 200
  - c. 1 : 400**
  - d. 1 : 800
  
4. The usual initial dose of chlorambucil is 150 mcg/kg of body weight. How many milligrams should be administered to a person weighing 183 lb?
  - a. 5.25 mg
  - b. 7.75 mg
  - c. 12.5 mg**
  - d. 21 mg
  
5. What is the percentage strength of methadone (mol. wt. 313) in a solution containing 10 mg of methadone hydrochloride (mol. wt. 349) in each millilitre?
  - a. 0.45%
  - b. 0.75%
  - c. 0.9%**
  - d. 1.25%

## Clinical Pharmacology (5 sample questions)

6. The biotransformation of a drug renders it:
  - a. Less ionised
  - b. Less lipid soluble**
  - c. More pharmacologically active
  - d. More lipid soluble
  
7. Conjugation of a drug include the following EXCEPT:
  - a. Glucuronidation
  - b. Hydrolysis**
  - c. Methylation
  - d. Sulphate formation
  
8. Which of the following is responsible for the potency and the toxicity of local anaesthetics?
  - a. Intermediate chain
  - b. Ionisable group
  - c. Lipophilic group**
  - d. All of the above
  
9. Which of the following effects would NOT be attributed to a beta agonist?
  - a. Bronchodilation
  - b. Increase contractility
  - c. Renin release by kidneys
  - d. Vasoconstriction**
  
10. Granulocytopenia, gastrointestinal irritation, gingival hyperplasia and hirsutism are possible adverse effects associated with:
  - a. Carbamazepine
  - b. Phenobarbitone
  - c. Phenytoin**
  - d. Valproate

## Basic Sciences and Properties of Medicines (5 sample questions)

11. Which of the following prodrug forms of hydrocortisone is likely to be the most lipophilic?
- Hydrocortisone hemisuccinate
  - Hydrocortisone phosphate
  - Hydrocortisone decanoate**
  - Hydrocortisone acetate
12. What molar ratio of salt / acid is required to prepare a sodium acetate – acetic acid buffer solution with a pH of 5.76? The pKa of acetic acid is 4.76 at 25 °C.
- 1:1
  - 2:1
  - 5:1
  - 10:1**
13. Which of the following statements are correct with respect to the definition of an isotope of an element?
- They contain the same number of protons but different numbers of electrons
  - They contain the same number of neutrons but different numbers of protons
  - They contain the same number of protons but different numbers of neutrons**
  - They contain the same numbers of electrons but different numbers of protons.
14. If your blood type is A+, you can give blood to
- A+, AB+**
  - everyone
  - B-, O-
  - A+, A-, AB+, AB-
15. Which of the following amino acids are responsible for forming disulphide bridges in proteins?
- Cysteine**
  - Methionine
  - Tryptophan
  - Tyrosine

## Pharmacy Practice

16. Which of the following statements with regards to a patient taking warfarin is TRUE:
- If the indication is Atrial Fibrillation, the target INR should be 3.0 – 4.0
  - If the indication is Atrial Fibrillation, the target INR should be 2.0 – 3.0**
  - If the indication is Ischaemic Heart Disease, the target should be 2.5 – 3.5
  - If the indication is primary Deep Vein Thrombosis, the target INR should be 3.0 – 4.0
17. Pantoprazole may be sold in a pharmacy without prescription for the treatment of
- Diarrhoea
  - Heartburn and acid regurgitation**
  - Nausea and vomiting
  - Peptic ulcer
18. Which of the following medicines is most likely to cause rebound congestion with over use?
- Codeine linctus
  - Chlorphenamine tablets
  - Oxymetazoline nasal spray**
  - Pseudoephedrine tablets
19. Which of the following is contraindicated in treating hypertension in pregnancy?
- Amlodipine
  - Atenolol
  - Labetolol
  - Lisinopril**
20. Which of the following statements regarding the request for an emergency supply of a medicine made by a patient is FALSE?
- It is not practicable for the patient to obtain the prescription without undue delay
  - There is an immediate need for the medicine
  - The pharmacist can safely specify the dose of the medicine for the patient
  - The treatment has been prescribed for the patient within the last 6 months**

## 6.2 Sample Questions for Part 2

Example 1:

Setting: It is a Wednesday afternoon 4pm. You are working as a pharmacist in a busy community pharmacy.

### **TASK**

**You are working as a community pharmacist when you are approached by a middle aged customer who wishes to give up smoking**

**Using appropriate questions, you are required to gather all relevant information from the customer and offer advice and/or a recommendation**

Example 2:

You are the clinical pharmacist at the local hospital.

Katie Walsh was admitted to Cork University Hospital through the A&E department last night with increased respiratory rate and generally feeling unwell.

This morning, on the ward, she is diagnosed with a urinary tract infection. She has no other medical conditions and does not take any other regular medicines.

You are provided with her hospital kardex (hospital drug chart).

## **TASK**

**Review the hospital kardex of Katie Walsh and contact Dr O'Sullivan by phone to discuss and/or resolve the therapeutic issue(s) you identify.**