الهيئة السعودية للتخصصات الصحية
Saudi Commission for Health Specialties

Saudi Pharmacist Licensure Examination (SPLE)

Examination Content Guideline

Note: Read this guide before submitting an application to test. At the time of application, you will be required to acknowledge that you have read and understood this guide and the policies and procedures contained within.

Examination Model

General Rules

What is Saudi Pharmacist Licensure Examination (SPLE)?

The SPLE is an exam that assesses the readiness of a pharmacist to practice and/or proceed to postgraduate training. It consists of 200 questions and may include up to 10% pilot questions. The exam consists of two parts, each containing 100 questions, with a time allocation of 120 minutes for each part. Also, it includes a scheduled 30-minute break between the two parts. The SPLE exams are delivered in a multiple-choice format and are intended to assess cognitive learning related to practice-related competencies. All exam questions are computer-based.

The exam contains two types of questions. First, recall questions that test knowledge. Second, scenario-based questions that test other skills (interpretation, analysis, decision-making, reasoning, and problem-solving).

How is the SPLE pass score established?

The Central Assessment Committee (CAC) approved a passing score of 536 on the reporting scale of 200-800, which was recommended by the Saudi Pharmacist Licensure Examination Council.

What is the exam format?

The examination format is based upon sections representing major areas of pharmacist practice. Within each section, related competencies and sub-competencies are clustered together.

What is a test blueprint, and what is its purpose?

A test blueprint is a document that reflects the content of the specialty licensure examination. The blueprint is the plan used for "building" the exam. The blueprint aims to ensure that the included questions relate to the main areas in the specialty in which the candidates are expected to know. This document provides important information about the topics covered on the examination and the competency areas in which candidates will be tested. The Saudi Pharmacist Licensure Examination Blueprint contains a comprehensive measure of knowledge in four major pharmacy content areas:

1. **10%** → Basic Biomedical Sciences

2. **35%** → Pharmaceutical Sciences
3. **20%** → Social/Behavioral/Administrative Sciences
4. **35%** → Clinical Sciences

Saudi Pharmacist Licensure Examination Blueprint

Section	Percentage (%)		Competency
(1) Basic Biomedical Sciences	10%	**1.1**	**Physiology**
		1.1.1	Function of the major body systems and homeostatic impact at organ and system level
		1.2	**Biochemistry**
		1.2.1	Chemistry and utilization of biomacromolecules including proteins, lipids, carbohydrates, nucleicacid, intermediary metabolism of energy and nutritional molecules
		1.2.2	Enzymology and coenzymes and kinetics
		1.2.3	Cell chemistry, signal transduction pathways
		1.2.4	DNA and RNA science and protein synthesis
		1.3	**Microbiology Related to Human Diseases**
		1.3.1	Structure, function, and characteristics of microorganisms: microbe classification, structure,metabolism, genetics
		1.3.2	Pathogenic microorganisms of humans: causative agents and transmission
		1.4	**Immunology**
		1.4.1	Innate and adaptive immunity
		1.4.2	Principles of antibody actions
		1.4.3	Hypersensitivity and types of reactions
		1.4.4	Molecular genetics, genomic, proteomic, and metabolic principles that serve as a foundation for pharmacogenomics and the genetic basis of disease

(2) Pharmaceutical Sciences	35%	**2.1**	**Medicinal Chemistry**
		2.1.1	Physicochemical properties of drugs in relation to drug absorption, distribution, metabolism, and excretion (ADME)
		2.1.2	Chemical basis for drug action
		2.1.3	Fundamental pharmacophores for drugs used to treat diseases
		2.1.4	Structure-activity relationships in relation to drug-receptor interactions
		2.1.5	Chemical pathways of drug metabolism
		2.1.6	Applicability of structure activity relationship to make drug therapy decision
		2.1.7	Drug development process
		2.2	**Pharmacology and Toxicology**
		2.2.1	Mechanisms of action of drugs of various categories including biologics
		2.2.2	Pharmacodynamics and response
		2.2.3	Classes of drugs, including individual agents and their approved indications
		2.2.4	Adverse effects, side effects, contraindications and teratogenicity of drugs
		2.2.5	Mechanisms of drug-drug interactions
		2.2.6	Drug discovery and development
		2.2.7	Acute and chronic toxicity, including drug and chemical overdose and antidotes
		2.3	**Pharmacognosy and Dietary Supplements**
		2.3.1	Concepts of crude drugs, semi-purified, and purified natural products
		2.3.2	Classes of pharmacologically active natural products
		2.3.3	Science of dietary supplements (vitamins, minerals, and herbals)
		2.4	**Pharmaceutics/Biopharmaceutics**
		2.4.1	Biopharmaceutical principles of drug delivery to the body via dosage forms: liquid, solid, semisolid, controlled release, patches, implants
		2.4.2	Materials and methods used in preparation of drug dosage forms
		2.4.3	Physicochemical properties relating to drug entities and dosage forms

		2.4.4	Principles of drug and dosage form stability, including chemical degradation and physicalinstability
		2.4.5	Principles of biotechnology and its application
		2.4.6	Principles of drug dosage form administration
		2.5	**Pharmacokinetics**
		2.5.1	Basic principles of in-vivo drug kinetics (linear and nonlinear)
		2.5.2	Principles of bioavailability and bioequivalence
		2.5.3	Physiologic determinates of drug onset and duration, including disease and dietary influences onabsorption, distribution, metabolism, and excretion
		2.6	**Sterile and Nonsterile Compounding**
		2.6.1	International Pharmacopeia guidelines on sterile and nonsterile compounding, hazardous drugs,and regulation of compounding
		2.6.2	Techniques and principles used to prepare dispense extemporaneous prescriptions andchemotherapy agents including labeling and dating of compounded dosage form
		2.6.3	Pharmaceutical calculations
		2.6.4	Sterile admixture techniques, including stability, clean-room requirements, sterility testing, anddating
(3) **Social/ Behavioral/ Administrative Sciences**	20%	**3.1**	**Health Care Delivery Systems and Public Health**
		3.1.1	Organization of health care delivery systems in the Kingdom of Saudi Arabia
		3.1.2	Social, political, and economic factors that influence the delivery of health care in the Kingdom ofSaudi Arabia
		3.1.3	Public Health and Wellness: chronic disease prevention, health promotion, infectious disease control,demographics, physical, social, and environmental factors leading to disease, comparing and contrasting public health with individual medical care
		3.2	**Population-Based Care and Pharmacoepidemiology**
		3.2.1	Data sources and analytic tools that provide an estimate of the probability of beneficial or adverse effects of medication use in large populations
		3.2.2	Application of epidemiological study designs to evaluate drug use and outcomes in largepopulations

		3.2.3	Methods for continually monitoring unwanted effects and other safety-related aspects ofmedication use in large populations
		3.2.4	Pharmacovigilance and medication safety
		3.3	**Pharmacoeconomics and Humanistic Outcomes of Health Care Delivery**
		3.3.1	Pharmacoeconomic analysis and its application to improve the allocation of limited health care resources
		3.3.2	Humanistic outcomes and their application to improve the allocation of limited health careresources
		3.4	**Pharmacy Practice Management**
		3.4.1	Management principles (planning, organizing, directing, and controlling pharmacy resources)applied to various pharmacy practice setting and patient outcomes
		3.4.2	Marketing of products and services: product versus service pricing, distribution, promotion
		3.4.3	Accounting, budgeting and financial management
		3.5	**Pharmacy Law and Regulatory Affairs**
		3.5.1	Legal and regulatory principles applied to pharmacy practice: dispensing, professional services,drug use control
		3.5.2	Administrative, civil, and criminal liability
		3.5.2	Authority, responsibilities, and operation of agencies and entities that promulgate or administerlaws, regulations, or guidance related to practice and prescription, controlled substances, and nonprescription medications
		3.6	**Biostatistics and Research Design**
		3.6.1	Research study designs used in medical research
		3.6.2	Application and interpretation of statistical tests and data collection instruments
		3.7	**Ethical Decision Making**
		3.7.1	Principles of biomedical ethics
		3.7.2	Ethical dilemmas in the delivery of patient, centered care including, conflicts of interest, end-of-life decision making, use of codes of ethics, oaths of the pharmacist
		3.7.3	Research ethics
		3.8	**Professional Communication**

		3.8.1	Principles of communication abilities (appropriate verbal, nonverbal, visual, and written) with patient and caregivers, including empathetic communication and effective use of health literacy tools
		3.8.2	Principles of communication abilities with other health care providers
		3.8.3	Assertiveness and problem-solving techniques in relation to difficult social and professional conflicts and situations
		3.8.4	Measurement and use of health literacy in pharmacy communications
		3.8.5	Development of cultural competency in pharmacy personnel such that services are respectful of and responsive to the health beliefs, practices, and cultural and linguistic needs of diverse patient populations
		3.9	**Social and Behavioral Aspects of Pharmacy Practice**
		3.9.1	Application of behavior modification principles in health and illness behaviors of patients
		3.9.2	Patient adherence to therapies and recommendations
		3.10	**Medication Dispensing and Distribution Systems**
		3.10.1	Systems for safe and effective preparation and dispensing of medications in all types of practice settings
		3.10.2	Role of automation and technology: pharmacy informatics, information management
		3.10.3	Continuous quality improvement programs or protocols in the medication-use process, including identification and prevention of medication errors, and establishment of error reduction programs
		4.1	**Drug Information and Evidence-based Practice**
		4.1.1	Interpret and evaluate drug information and evidence based practice in the patient care decision-making process
		4.1.2	Apply drug-information skills for the delivery of medication therapy management
		4.1.3	Evaluate the reliability of various sources of information
		4.1.4	Interpret guidelines as they apply in a clinical setting
		4.1.4	Utilize basic science principles in the development and/or implementation of

(4) **Clinical Sciences**	35%		drug treatmentprotocols and clinical practice guidelines
		4.2	**Clinical Pharmacokinetics**
		4.2.1	Identify common drugs that require therapeutic drug monitoring and utilize appropriate monitoring pharmacokinetic parameters to avoid toxicity and maintain efficacy
		4.3	**Clinical pharmacogenomics**
		4.3.1	Utilize basic pharmacogenomics information to individualize drug therapy
		4.4	**Disease Prevention and Population Health**
		4.4.1	Recognize the proper use of nonpharmacologic therapies, including complementary and alternative medicines
		4.4.2	Describe measures to promote wellness and disease prevention
		4.4.3	Identify the role of immunizations in disease prevention and health promotion
		4.5	**Patient Assessment**
		4.5.1	Describe techniques for obtaining a comprehensive patient history
		4.5.2	Describe how to perform patient physical assessments.
		4.5.3	Differentiate between normal physical assessment findings and modifications caused by common disease states and drug therapy
		4.5.4	Identify and prioritize drug related problems
		4.5.5	Interpret common clinical laboratory values and diagnostic tests
		4.5.6	Perform calculations related to patient assessment
		4.6	**Clinical Pharmacology and Therapeutic Decision Making**
		4.6.1	Apply concepts of pathophysiology to clinical decision making
		4.6.2	Make therapy recommendations based on dosage calculations, specific uses and indications ofdrugs and nutritional and support therapy
		4.6.3	Assess pharmacotherapy considering contraindications, therapeutic duplications, dietaryinteractions, adverse drug reactions and interactions, and allergies

		4.6.4	Triage and identify when to refer patients to other health professionals
		4.6.5	Design patient-centered, culturally-relevant treatment plans
		4.6.6	Apply evidence-based decision making to patient care
		4.6.7	Recommend nonprescription and natural product therapies
		4.6.8	Identify and manage drug side effects, toxicity, drug-induced diseases, and drug misuse or abuse
		4.6.9	Monitor drug therapy for safety, effectiveness, non-adherence, misuse and/or abuse
		4.6.10	Genetic Variants affecting drug action and metabolism, adverse drug reactions, and disease riskthat influence the practice of personalized medicine
		4.6.11	Counsel and educate patients in the different settings on all types of pharmaceutical agents to ensure safe and proper use of medications, storage and proper administration
		4.6.12	Pharmacotherapy considerations in special populations such as neonates and pediatrics,pregnant women, lactating mothers and geriatrics

Note: Blueprint distributions of the examination may differ up to +/-5% in each level.

References

- Dick R. Gourley , James C. Eoff III, The APhA Complete Review for Pharmacy, the American PharmacistsAssociation.
- William E Paul. Fundamental Immunology, Philadelphia, USA, Lippincott Williams & Wilkins.
- Lippincott's Illustrated Reviews: Biochemistry.
- Lippincott Illustrated Reviews: Pharmacology.
- Leon Shargel, Alan H. Munick, Paul F. Souney, Larry N. Swanson. Comprehensive Pharmacy Review
- Goodman & Gilman's: The Pharmacological Basis of Therapeutics.
- Shargel, Applied Biopharmaceutics & Pharmacokinetics, the Middle East Observer, USA: Appleton and Lange.
- Howard C. Ansel, Mitchell J. Stoklosa, Pharmaceutical Calculations.
- Aulton, M., E., Pharmaceutics: The Science of Dosage Form Design, London Churchill Livingstone.
- Karen E. Stine, Thomas M. Brown, Principles of Toxicology.
- Karen Rascati. Essentials of Pharmacoeconomics. Lippincott Williams & Wilkins.
- Brian L. Strom. Textbook of Pharmacoepidemiology.
- Chisholm-Burns, Allison M. Vaillancourt, Marv Shepherd. Pharmacy Management, Leadership, Marketing, andFinance.
- Nathaniel M. Rickles, Albert I. Wertheimer, Mickey C. Smith. Social And Behavioral Aspects of Pharmaceutical Care.
- Rajender R. Aparasu and John P. Bentley. Principles of Research Design and Drug Literature Evaluation.
- James E. De Muth. Basic Statistics and Pharmaceutical Statistical Applications.
- Josef T. Dipiro Pharmacotherapy: A Pathophysiologic Approach
- Koda-Kimble and Young's Applied Therapeutics: The Clinical Use of Drugs
- Rhonda M. Jones , Raylene M. Rospond, Patient Assessment in Pharmacy Practice.
- Karen J. Tietze, Clinical Skills for Pharmacists
- Daniel L. Krinsky, Stefanie P. Ferreri, Brian Hemstreet, Anne L. Hume, Gail D. Newton, Carol J. Rollins and Karen J.Tietze, Handbook of Nonprescription Drugs: An Interactive Approach to Self-Care.
- Drug list in KSA: https://www.sfda.gov.sa/en/drug/search/Pages/default.aspx
- إجـراءات وضوابــط المواد المخـدرة والمؤثرات العقلية الهيئة العامة للغذاء والدواء
- MOH list of required immunizations: https://www.moh.gov.sa/en/Ministry/Rules/Pages/default.aspx
- https://www.sfda.gov.sa/ar/drug/drug_reg/DocLib/anti_drugs.pdf
- Lexicomp (handbook or online). Ohio: Wolters Kluwer Clinical Drug Information, Inc; Latest Edition.

Note:

This list is intended for use as a study aid only. SCFHS does not intend the list to imply endorsement of these specific references, nor arethe exam questions necessarily taken from these sources.

Efficiently healthy society