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39	A	B	C	D	E

PRACTICE QUESTIONS

TTBU - The Testing Board Ukraine

1PCUK

Krok 1 Pharmacy (Ukrainian) & English Proficiency

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

Before you begin

What this is

9 practice questions for TTBU - The Testing Board Ukraine **1PCUK**, each with its answer key and an explanation. Answer a question before you read its key — the explanation is worth more once you have committed.

If something looks wrong

Send us three things and we will check it:

- the exam code, **1PCUK**
- the question number
- the email address on your order

Write to **support@mometrix.net**. We reply within one business day.

QUESTION 1

SINGLE CHOICE

A patient with hypertension is started on an angiotensin-converting enzyme (ACE) inhibitor. Which of the following adverse effects is most characteristic of this drug class?

- ☒ **A** Dry cough
- ☐ **B** Tachycardia
- ☐ **C** Hyperglycemia
- ☐ **D** Constipation

ANSWER A

WHY ACE inhibitors (e.g., enalapril, lisinopril) prevent the breakdown of bradykinin in the lungs, leading to its accumulation and a characteristic dry, non-productive cough. This is the most common class-specific side effect and a frequent reason for switching to an ARB. Tachycardia, hyperglycemia, and constipation are not characteristic ACE inhibitor effects.

QUESTION 2

SINGLE CHOICE

According to Good Pharmacy Practice principles, what is the primary responsibility of a pharmacist when dispensing a prescription medication?

- ☒ **A** Ensuring the safe, effective, and appropriate use of medicines by the patient
- ☐ **B** Maximizing the sales volume of the pharmacy
- ☐ **C** Reducing the time spent with each patient to serve more customers
- ☐ **D** Replacing prescribed brands with the most expensive available alternatives

ANSWER A

WHY The core mission of pharmaceutical care and Good Pharmacy Practice (as defined by FIP/WHO) is the patient's health and the rational, safe, and effective use of medicines. Options B, C, and D describe behaviors that contradict professional pharmacy ethics.

QUESTION 3

SINGLE CHOICE

Which receptor type mediates bronchodilation when beta-2 adrenergic agonists (e.g., salbutamol) are used in the treatment of asthma?

- ☒ **A** Beta-2 adrenergic receptors
- ☐ **B** Muscarinic M3 receptors
- ☐ **C** Alpha-1 adrenergic receptors
- ☐ **D** Histamine H1 receptors

ANSWER A

WHY Beta-2 adrenergic receptors are densely expressed on bronchial smooth muscle. Their activation leads to smooth muscle relaxation and bronchodilation. Salbutamol (albuterol) is a selective beta-2 agonist used as a rescue inhaler. Muscarinic M3 activation causes bronchoconstriction, alpha-1 receptors mediate vasoconstriction, and H1 receptors mediate allergic responses.

QUESTION 4

SINGLE CHOICE

Which functional group is characteristic of para-aminobenzoic acid (PABA) derivatives used as local anesthetics (e.g., procaine, benzocaine)?

- ☒ **A** Ester linkage between an aromatic acid and an amino alcohol
- ☐ **B** Thiazide ring fused to a sulfonamide group
- ☐ **C** Quaternary ammonium moiety
- ☐ **D** Beta-lactam ring fused to a thiazolidine

ANSWER A

WHY Procaine, benzocaine, tetracaine and other '-caine' ester local anesthetics are esters of para-aminobenzoic acid. They are hydrolyzed rapidly by plasma pseudocholinesterase, giving them a short duration of action and a higher incidence of allergic reactions compared with amide-type local anesthetics such as lidocaine.

QUESTION 5

SINGLE CHOICE

Beta-lactam antibiotics (penicillins, cephalosporins) exert their bactericidal effect by:

- ☒ **A** Inhibiting bacterial cell wall synthesis by binding to penicillin-binding proteins (PBPs)
- ☐ **B** Inhibiting bacterial protein synthesis at the 30S ribosomal subunit
- ☐ **C** Inhibiting bacterial DNA gyrase (topoisomerase II)
- ☐ **D** Inhibiting folate synthesis at the dihydropteroate synthetase step

ANSWER A

WHY Beta-lactams structurally resemble the D-Ala-D-Ala terminus of peptidoglycan precursors and acylate penicillin-binding proteins (transpeptidases), blocking peptidoglycan cross-linking and weakening the cell wall. Aminoglycosides and tetracyclines act on the 30S subunit, fluoroquinolones inhibit DNA gyrase, and sulfonamides block dihydropteroate synthetase.

QUESTION 6

SINGLE CHOICE

Which antiarrhythmic drug class is characterized by blockade of sodium channels and local anesthetic-like activity, with use-dependent (use-state-dependent) binding?

- ☒ **A** Class I (e.g., procainamide, lidocaine, flecainide)
- ☐ **B** Class II (beta-blockers)
- ☐ **C** Class III (amiodarone, sotalol)
- ☐ **D** Class IV (calcium channel blockers)

ANSWER A

WHY The Vaughan-Williams Class I antiarrhythmics are sodium channel blockers. They show use-dependent blockade, binding preferentially to the open or inactivated state of the channel, which makes them more effective at faster heart rates. Class II are beta-blockers, Class III prolong repolarization (K⁺ channel blockers), and Class IV are non-dihydropyridine calcium channel blockers.

QUESTION 7

SINGLE CHOICE

Selective serotonin reuptake inhibitors (SSRIs), such as fluoxetine, sertraline and citalopram, are used as first-line agents in the treatment of:

- ☒ **A** Major depressive disorder and anxiety disorders
- ☐ **B** Acute bacterial meningitis
- ☐ **C** Insulin-dependent diabetes mellitus
- ☐ **D** Chronic obstructive pulmonary disease

ANSWER A

WHY SSRIs selectively inhibit the serotonin transporter (SERT), increasing synaptic 5-HT and producing antidepressant and anxiolytic effects after 2–4 weeks of continuous use. They have a more favorable safety profile than tricyclic antidepressants and are first-line for depression and many anxiety disorders (panic, GAD, OCD, PTSD). They have no role in the other listed conditions.

QUESTION 8

SINGLE CHOICE

Hard gelatin capsules are most suitable for the delivery of:

- ☒ **A** Solid, powdered or granular drug formulations intended for oral administration
- ☐ **B** Sterile aqueous solutions for intravenous injection
- ☐ **C** Oily suspensions for topical ophthalmic use
- ☐ **D** Dry powders intended for inhalation into the lungs

ANSWER A

WHY Hard gelatin capsules consist of two prefabricated cylindrical shells that are filled with powders, granules, pellets, or small tablets. They are an oral solid dosage form and are not used for sterile injectables, ophthalmic preparations, or inhaled dry-powder aerosols, which require specially engineered devices.

QUESTION 9

MULTIPLE CHOICE

Which of the following drugs are used to reduce gastric acid secretion? (Choose two.)

- ☒ **A** Omeprazole
- ☒ **B** Famotidine
- ☐ **C** Magnesium hydroxide
- ☐ **D** Simethicone

ANSWER **A - B**

WHY Omeprazole is a proton pump inhibitor (PPI) that irreversibly blocks the H⁺/K⁺-ATPase of gastric parietal cells. Famotidine is an H₂-receptor antagonist that blocks histamine-stimulated acid secretion. Both reduce acid secretion. Magnesium hydroxide is a systemic antacid (neutralizes existing acid but does not reduce secretion), and simethicone is an antifoaming/deflatulent agent with no effect on acid.