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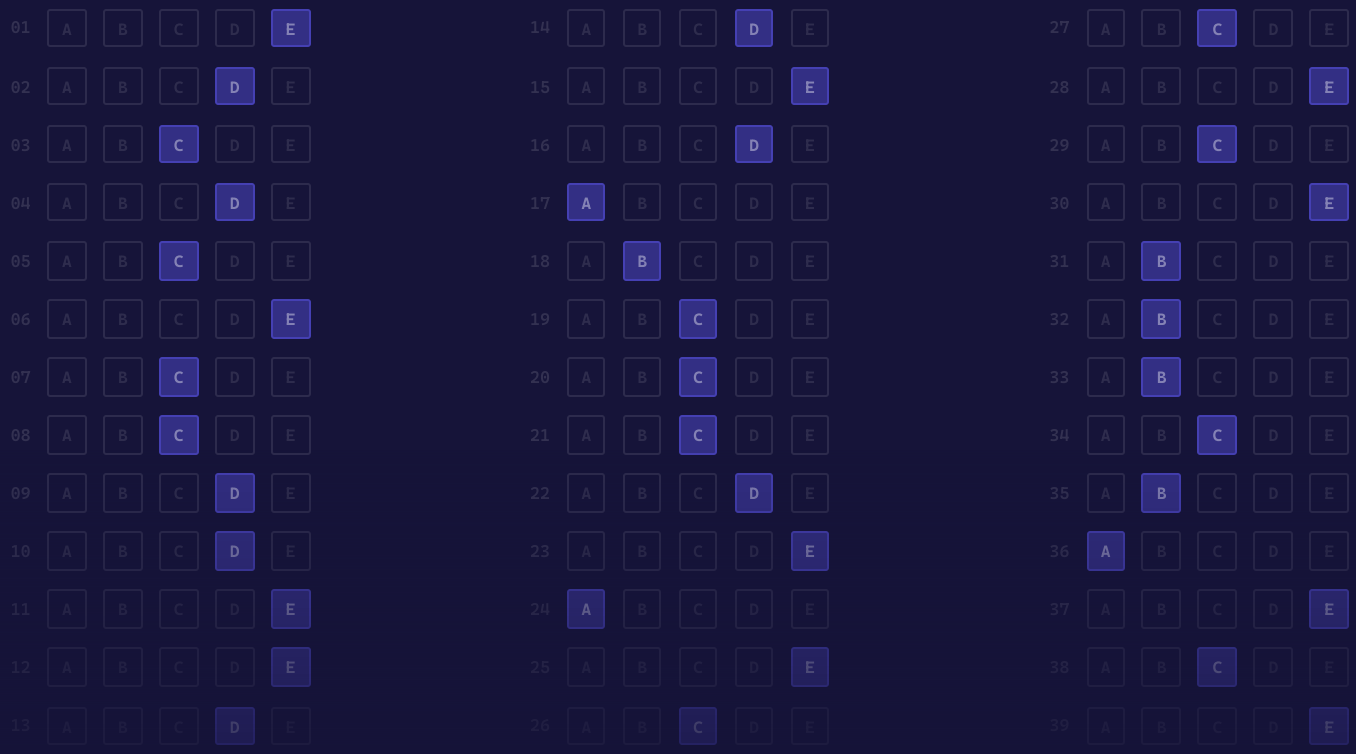

PRACTICE QUESTIONS

TTBU - The Testing Board Ukraine

1PHEN

Krok 1 Pharmacy (English) & English Proficiency

EDITION	QUESTIONS	FORMAT
Demo	9	Limited Edition PDF

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Before you begin

What this is

9 practice questions for TTBU - The Testing Board Ukraine `1PHEN`, 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, `1PHEN`
- the question number
- the email address on your order

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

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QUESTION 1 MULTIPLE CHOICE

A prescription calls for the following components: 2.0 g of menthol, 4.0 g of camphor, and 30.0 g of lanolin. The prescription is for an ointment formulation. Which of the following statements correctly describe the roles of these components? (Choose two.)

A **Menthol acts as the active pharmaceutical ingredient (local irritant/analgesic).**

B Camphor acts as the ointment base.

C Lanolin acts as the active pharmaceutical ingredient.

D **Lanolin acts as the ointment base (vehicle).**

ANSWER **A · D**

WHY In this formulation, menthol and camphor are the pharmacologically active substances (local irritants used for their counterirritant/analgesic effects), while lanolin functions as the hydrophobic ointment base (vehicle) that carries the active ingredients and gives the preparation its semisolid consistency. Camphor is not a base, and lanolin is not an active drug in this context.

QUESTION 2 MULTIPLE CHOICE

Which of the following pairs correctly match a medicinal plant raw material with the part of the plant that is officially used as the crude drug? (Choose two.)

A **Senna (Cassia acutifolia) – leaves (folia).**

B **Valerian (Valeriana officinalis) – rhizomes with roots (rhizomata cum radicibus).**

C Peppermint (Mentha piperita) – roots (radices).

D Thyme (Thymus vulgaris) – bark (cortex).

ANSWER **A · B**

WHY Senna is collected as leaves (Sennae folium) and valerian as rhizomes with attached roots (Valerianae rhizomata cum radicibus). Peppermint is used as the leaves (herba/folium), not roots, and thyme is used as the herb (Herba Thymi), not bark.

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QUESTION 3 SINGLE CHOICE

Acetylsalicylic acid (aspirin) produces its analgesic, antipyretic and anti-inflammatory effects primarily by inhibiting which enzyme?

A **Cyclooxygenase (COX), thereby reducing prostaglandin synthesis.**

B Phospholipase A2, thereby reducing arachidonic acid release.

C Lipoxygenase, thereby reducing leukotriene synthesis.

D Acetylcholinesterase, thereby increasing acetylcholine levels.

ANSWER A

WHY Aspirin irreversibly acetylates cyclooxygenase (COX-1 and COX-2), blocking the conversion of arachidonic acid to prostaglandin H2 and thereby reducing downstream prostaglandins and thromboxanes that mediate pain, fever and inflammation. This is the central mechanism tested in pharmacology on this exam.

QUESTION 4 SINGLE CHOICE

A prescription reads: "Rp.: Solutionis Hydrogenii peroxydi 3% – 100 ml. Da. Signa: For wound treatment." Which statement about this prescription is correct?

A **The prescription is written correctly: the concentration (3%), the dosage form (solution) and the total volume (100 ml) are all properly indicated.**

B The prescription is invalid because hydrogen peroxide solutions are always prescribed as undiluted 30% concentrate.

C The prescription is invalid because the doctor should have specified the dose in grams of the active substance rather than as a percentage.

D The prescription is invalid because solutions of hydrogen peroxide are not used externally.

ANSWER A

WHY External antiseptic solutions of hydrogen peroxide are routinely prescribed as a percentage concentration in a stated total volume (here, 3% in 100 ml) with an external label ("Signa"). This is a valid extemporaneous prescription. The other options contradict normal pharmacy practice.

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QUESTION 5 SINGLE CHOICE

Which group of biologically active compounds is responsible for the cardiotonic activity of foxglove (Digitalis) leaves?

A **Cardiac glycosides (cardenolides), such as digitoxin and gitoxin.**

B Alkaloids, such as quinidine.

C Tannins, such as gallo- and ellagitannins.

D Flavonoids, such as rutin and quercetin.

ANSWER **A**

WHY The cardiotonic action of Digitalis (foxglove) leaves is due to cardiac glycosides of the cardenolide group (digitoxin, gitoxin, digoxin). Alkaloids such as quinidine are typical of Cinchona bark, tannins are typical of oak or witch-hazel, and flavonoids are typical of buckwheat or Sophora.

QUESTION 6 SINGLE CHOICE

A patient with bronchial asthma is prescribed propranolol. Which adverse effect related to the mechanism of action should the pharmacist warn the patient about?

A **Bronchospasm due to non-selective blockade of β2-adrenoceptors in the airways.**

B Sedation due to blockade of central H1-histamine receptors.

C Hepatotoxicity due to direct toxic action on hepatocytes.

D Ototoxicity due to damage to the hair cells of the cochlea.

ANSWER **A**

WHY Propranolol is a non-selective β-blocker; blockade of β2-receptors in bronchial smooth muscle can provoke bronchospasm, which is dangerous in patients with asthma or COPD. Sedation via H1 blockade is the mechanism of first-generation antihistamines; hepatotoxicity is not characteristic; ototoxicity is typical of aminoglycosides and loop diuretics.

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QUESTION 7 SINGLE CHOICE

Which inorganic compound is used as an antacid in the treatment of hyperacidity of gastric juice?

A **Magnesium oxide (Magnesii oxydum, MgO).**

B Sodium chloride (NaCl).

C Potassium iodide (KI).

D Silver nitrate (AgNO3).

ANSWER **A**

WHY Magnesium oxide (burnt magnesia) neutralises hydrochloric acid in the stomach and is used as an antacid, along with related substances such as magnesium hydroxide and aluminium hydroxide. Sodium chloride is an isotonic/isotonic saline component, potassium iodide is an expectorant, and silver nitrate is a caustic/astringent.

QUESTION 8 SINGLE CHOICE

Enalapril lowers blood pressure by which mechanism of action?

A **Inhibition of angiotensin-converting enzyme (ACE), resulting in reduced formation of angiotensin II.**

B Blockade of angiotensin II AT1 receptors in vascular smooth muscle.

C Stimulation of central α2-adrenoceptors, decreasing sympathetic outflow.

D Direct blockade of voltage-dependent calcium channels in arteriolar smooth muscle.

ANSWER **A**

WHY Enalapril is a prodrug that is hydrolysed in the liver to enalaprilat, which inhibits angiotensin-converting enzyme (ACE), reducing the conversion of angiotensin I to angiotensin II and increasing bradykinin levels. AT1-receptor blockade is the mechanism of losartan and similar sartans; clonidine is a central α2-agonist; amlodipine blocks calcium channels.

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QUESTION 9 SINGLE CHOICE

A patient brings you a product labelled: "For oral administration. Shake well before use. Store below 25°C, protected from light. Keep out of reach of children." Which instruction is the most important to verify with the patient at dispensing?

A **That the patient understands the product is taken by mouth.**

B That the patient understands the product must be injected intravenously.

C That the patient understands the product must be applied only to the skin.

D That the patient understands the product must be inhaled.

ANSWER **A**

WHY The label clearly states "For oral administration," meaning the medicine is taken by mouth. Inhalational, topical and parenteral routes have very different instructions and would be inconsistent with this label, so confirming the correct route is essential for safe dispensing.

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