PEBC MCQ: 20 Practice Questions and Answers

Twenty original practice questions in the style of the PEBC Qualifying Examination Part I (MCQ), each with the answer and a worked explanation that cites its Canadian source. Questions first, answers after, so you can test yourself.

> **These are not real PEBC exam questions.** PEBC does not publish past papers, and we do not use or sell recalled questions. Every question here was written by PEBC Prep from Canadian guidelines, product monographs, NAPRA standards and federal law. None is copied or paraphrased from PEBC's own sample questions.

The real exam, as PEBC describes it

Questions	200 multiple-choice (150 scored, 50 unscored pretest), one best answer from 4
Testing time	4 hours 20 min, one section
Form	Standalone and case-based questions; each candidate gets a unique form built to the blueprint
Result	Pass or fail only; PEBC does not publish a pass mark

Blueprint weights (Ver. 03-2026), which this set follows:

1A Clinical Care	about 50%
1B Distribution	about 20%
2 Knowledge & Expertise	about 11%
3 Communication & Collaboration	about 4%
4 Leadership & Stewardship	about 3%
5 Professionalism	about 12%

Source: pebc.ca (FAQ, Part I (MCQ), Examination Scoring and Results, Qualifying Examination Blueprint Ver. 03-2026), checked 11 Nov 2026. PEBC can change the format; confirm on pebc.ca before you apply.

Questions

QUESTION 1 · 1A CLINICAL CARE · HYPERTENSION & DYSLIPIDEMIA

WB, 82, started hydrochlorothiazide 25 mg daily 3 weeks ago. Her daughter reports new confusion and unsteadiness. Which laboratory abnormality is most likely related to the new drug?

a. Hyperkalemia

b. Hypoglycemia

c. Hypercalciuria

d. Hyponatremia

QUESTION 2 · 1A CLINICAL CARE · HEART FAILURE, AF, CAD & ANTICOAGULATION

RJ, 60, uses an isosorbide mononitrate 60 mg extended-release tablet each morning for angina. He presents a new prescription for tadalafil 10 mg as needed for erectile dysfunction. Which of the following is the most appropriate action for the pharmacist?

a. Dispense tadalafil and advise a half dose for the first use

b. Contact the prescriber; nitrates and PDE5 inhibitors must never be combined

c. Dispense tadalafil, since it is safer with nitrates than sildenafil

d. Dispense tadalafil and advise taking it 4 hours after the nitrate

QUESTION 3 · 1A CLINICAL CARE · DIABETES, THYROID, BONE & HORMONES

The husband of NM, 67, who uses insulin, calls the pharmacy: she is unconscious and cannot swallow, and her glucose meter reads 2.1 mmol/L. They have a glucagon kit at home. What should he be told to do?

a. Give glucagon 1 mg IM or SC, call 911, and give nothing by mouth

b. Rub honey or glucose gel inside her cheek and call back in 15 minutes

c. Call 911 and wait for paramedics before giving any treatment

d. Give glucagon 0.5 mg now and repeat 0.5 mg if she is not awake in 15 minutes

QUESTION 4 · 1A CLINICAL CARE · ASTHMA, COPD & SMOKING CESSATION

A prescription for timolol 0.5% eye drops for glaucoma is received for AW, 62, who has moderate persistent asthma on an ICS/LABA. Which of the following is the main concern?

a. Timolol drops will raise her blood glucose

b. Systemic absorption may cause bronchospasm

c. Timolol will reduce the effect of her ICS on inflammation

d. Timolol drops will interact with her LABA and cause tachycardia

QUESTION 5 · 1A CLINICAL CARE · INFECTIOUS DISEASES & IMMUNIZATION

ML, 32, healthy and not pregnant, has had dysuria, frequency and urgency for 2 days without fever, flank pain or vaginal discharge. She has no drug allergies and normal kidney function. Which treatment is most appropriate?

a. Amoxicillin 500 mg three times daily for 3 days

b. Cephalexin 500 mg four times daily for 14 days

c. Nitrofurantoin 100 mg twice daily for 5 days

d. Ciprofloxacin 500 mg twice daily for 7 days to cover resistant organisms

QUESTION 6 · 1A CLINICAL CARE · NEUROLOGY & MENTAL HEALTH

Two days after starting haloperidol, KB, 22, has a sustained upward deviation of his eyes and a twisted neck. He is frightened but breathing normally. Which of the following is the most likely effect and treatment?

a. Neuroleptic malignant syndrome; give dantrolene

b. Acute dystonia; give benztropine or diphenhydramine

c. Akathisia; give propranolol

d. Tardive dyskinesia; reduce the haloperidol dose

QUESTION 7 · 1A CLINICAL CARE · GI, RENAL & HEPATIC DISORDERS

A prescription for metoclopramide 10 mg four times daily for 6 months is written for an 80 year old with diabetic gastroparesis. Which of the following is the main safety concern?

a. Severe constipation

b. Hepatotoxicity requiring weekly liver tests

c. Tardive dyskinesia with long-term use

d. Hypoglycemia from faster gastric emptying

QUESTION 8 · 1A CLINICAL CARE · PAIN, MUSCULOSKELETAL & RHEUMATOLOGY

A physician asks about prescribing codeine/acetaminophen for an 8 year old after a broken arm. Which of the following should the pharmacist advise?

a. Codeine is safe at half the adult dose in children of this age and weight

b. Codeine is preferred because it causes less constipation

c. Codeine can be used if the child has no asthma

d. Codeine should not be used under age 12; suggest another option

QUESTION 9 · 1A CLINICAL CARE · SELF-CARE & MINOR AILMENTS

A 25 year old swimmer has ear pain that worsens when the outer ear is pulled, with some itching and discharge. Which recommendation is most appropriate?

a. Insert cotton swabs to dry the ear canal thoroughly after each swim

b. Use olive oil drops and wait 2 weeks

c. Refer him; prescription antibiotic ear drops are usually needed

d. Oral amoxicillin from the pharmacy for 7 days

QUESTION 10 · 1A CLINICAL CARE · SPECIAL POPULATIONS & OTHER THERAPEUTICS

A dermatologist prescribes isotretinoin for KF, a 20 year old woman with severe nodular acne that did not respond to oral antibiotics. KF is sexually active. Which requirement is most important before and during therapy?

a. Avoiding all dairy products during treatment

b. Daily vitamin A supplements to replace losses

c. Negative pregnancy tests and two forms of contraception

d. Monthly eye examinations to screen for drug-induced cataracts

QUESTION 11 · 1B DISTRIBUTION · PRESCRIPTION REVIEW & DISPENSING

A new prescription reads 'methotrexate 2.5 mg tablets, take 4 tablets daily, mitte 100' for a 66 year old with psoriasis. Which of the following is the most appropriate action for the pharmacist?

a. Contact the prescriber; methotrexate for psoriasis is never taken daily

b. Dispense as written, since psoriasis needs daily dosing to control flares

c. Dispense as written with a label to take on an empty stomach

d. Change the directions to weekly and dispense

QUESTION 12 · 1B DISTRIBUTION · PHARMACEUTICAL CALCULATIONS

BR is a 72 year old male weighing 80 kg with a serum creatinine of 150 umol/L. Using CrCl (mL/min) = [(140 - age) x actual body weight (kg) x 1.2] / SCr (umol/L), and multiplying by 0.85 for females, what is BR's estimated creatinine clearance?

a. 37 mL/min

b. 44 mL/min

c. 51 mL/min

d. 96 mL/min

QUESTION 13 · 1B DISTRIBUTION · PHARMACEUTICAL CALCULATIONS

An order for an 80 kg patient reads: heparin 18 units/kg/h by continuous IV infusion. The bag contains heparin 25,000 units in 500 mL D5W. At what rate should the pump be set?

a. 0.48 mL/h

b. 14.4 mL/h

c. 24.0 mL/h

d. 28.8 mL/h

QUESTION 14 · 1B DISTRIBUTION · COMPOUNDING, PRODUCT PREPARATION & INVENTORY

While preparing an IV antibiotic in a laminar airflow hood, a technician places her hands between the HEPA filter and the vial's rubber stopper. Why is this a problem?

a. It blocks first air from reaching the critical site

b. It warms the vial and degrades the antibiotic

c. It makes the hood's alarm sound and stop airflow

d. It increases the risk of a needlestick injury to the technician

QUESTION 15 · 2 KNOWLEDGE & EXPERTISE · EVIDENCE-BASED PRACTICE & DRUG INFORMATION

In an intention-to-treat analysis of a randomized controlled trial, patients are analyzed:

a. in the groups to which they were randomized, whether or not they took the assigned treatment.

b. according to the treatment they actually received during the study period.

c. only if they completed the study and took at least 80% of their assigned doses as prescribed.

d. after patients who stopped treatment because of adverse effects are excluded.

QUESTION 16 · 2 KNOWLEDGE & EXPERTISE · EVIDENCE-BASED PRACTICE & DRUG INFORMATION

A screening test with fixed sensitivity and specificity is moved from a specialty clinic, where disease prevalence is 30%, to a community pharmacy screening event, where prevalence is 3%. Compared with the clinic, the test's performance in the community will show:

a. a lower positive predictive value.

b. a higher positive predictive value.

c. a lower specificity.

d. a lower negative predictive value.

QUESTION 17 · 3 COMMUNICATION & COLLABORATION · COMMUNICATION, COLLABORATION & DOCUMENTATION

A patient is upset that his prescription is not ready after a 30-minute wait and raises his voice at the counter. Which of the following is the best initial response?

a. Ask a technician to speak with him while you finish checking

b. Apologise and offer to fill his prescription ahead of those waiting

c. Explain that prescriptions are filled in the order they are received

d. Acknowledge his frustration calmly and explain the next steps

QUESTION 18 · 4 LEADERSHIP & STEWARDSHIP · PUBLIC HEALTH & STEWARDSHIP

During a measles outbreak in the community, an adult born in 1985 with no vaccination records asks if she needs vaccine. Which of the following is the most appropriate response?

a. Order antibody testing and wait 3 months for results

b. Recommend vitamin A supplements instead of vaccine

c. No vaccine is needed for adults over 30

d. Offer MMR, since she has no documented immunity

QUESTION 19 · 5 PROFESSIONALISM · CANADIAN PHARMACY LAW & REGULATION

Under the NAPRA National Drug Schedules, which statement correctly describes a Schedule II drug?

a. Sold from the pharmacy's self-selection professional services area

b. It must be kept out of public reach and sold only after pharmacist intervention

c. Requires a prescription from a practitioner before sale

d. Sold from any retail outlet, with no professional supervision at all

QUESTION 20 · 5 PROFESSIONALISM · ETHICS, PATIENT SAFETY & QUALITY

According to the ISMP hierarchy of effectiveness, which intervention is the strongest for preventing a medication error from recurring?

a. Re-educating staff about the error

b. A new written policy telling staff to take extra care

c. A forcing function, such as oral syringes that cannot fit IV lines

d. A warning reminder on the computer screen

Answers and explanations

QUESTION 1 · ANSWER D

Answer: Hyponatremia. Thiazides commonly cause hyponatremia, especially in older women and in the first weeks of therapy, and it can present as confusion, unsteadiness and falls.
Why not the others:
- Hyperkalemia: wrong direction; thiazides increase potassium loss and cause hypokalemia.
- Hypercalciuria: wrong direction; thiazides reduce urinary calcium excretion and can raise serum calcium.
- Hypoglycemia: not a thiazide effect; thiazides tend to raise blood glucose, not lower it.
Watch out: Forgetting that thiazides lower calcium excretion and lower, not raise, potassium.
Rule: Electrolytes should be checked soon after starting a thiazide in an older adult, and WB's new symptoms warrant prompt sodium testing.
Source: Hydrochlorothiazide product monograph, Warnings: fluid and electrolyte imbalance (DPD, checked 2026); 2023 AGS Beers Criteria (diuretics and SIADH/hyponatremia).

Ref cvh-a-013

QUESTION 2 · ANSWER B

Answer: Contact the prescriber; nitrates and PDE5 inhibitors must never be combined. The prescriber needs to reconsider either the angina regimen or the erectile dysfunction treatment.
Why not the others:
- Dispense tadalafil and advise taking it 4 hours after the nitrate: this does not help, because a daily long-acting nitrate is present around the clock.
- Dispense tadalafil and advise a half dose for the first use: the contraindication applies at any tadalafil dose.
- Dispense tadalafil, since it is safer with nitrates than sildenafil: backwards; tadalafil's long half-life means nitrates should not be given within 48 hours of it, compared with 24 hours for sildenafil.
Watch out: Thinking a nitrate and PDE5 inhibitor can be safely spaced.
Rule: PDE5 inhibitors potentiate the vasodilating effect of nitrates and can cause severe hypotension, so concurrent use of any nitrate is contraindicated.
Source: Tadalafil (Cialis) product monograph, Contraindications: nitrates (DPD, checked 2026); isosorbide mononitrate product monograph (checked 2026).

Ref cva-a-007

QUESTION 3 · ANSWER A

Answer: Give glucagon 1 mg IM or SC, call 911, and give nothing by mouth. She is unconscious and cannot swallow: level 3 hypoglycemia.
Why not the others:
- Rub honey or glucose gel inside her cheek and call back in 15 minutes: nothing should be given by mouth, including buccal gel or honey, because of choking and aspiration risk.
- Give glucagon 0.5 mg now and repeat 0.5 mg if she is not awake in 15 minutes: the 0.5 mg glucagon dose is for young children.
- Call 911 and wait for paramedics before giving any treatment: this delays treatment that the family can give safely.
Rule: In level 3 hypoglycemia with an unconscious person and no IV access, Diabetes Canada's 2023 update recommends glucagon 1 mg subcutaneously or intramuscularly (or nasal glucagon 3 mg) and calling emergency services. Once awake and able to swallow, the person should eat.
Source: Diabetes Canada CPG, Hypoglycemia in Adults, 2023 update (Can J Diabetes 2023;47:548-559); glucagon for injection product monograph (DPD, checked 2026).

Ref endo-a-002

QUESTION 4 · ANSWER B

Answer: Systemic absorption may cause bronchospasm. Ophthalmic timolol is absorbed systemically through the nasolacrimal duct and can cause bronchospasm in people with asthma.
Why not the others:
- Timolol drops will raise her blood glucose: beta-blockers can mask hypoglycemia warning signs in diabetes but do not typically raise glucose, and nothing suggests AW has diabetes.
- Timolol drops will interact with her LABA and cause tachycardia: wrong direction; a beta-blocker slows the heart and blocks the bronchodilating effect of her LABA, which is part of why it is dangerous here.
- Timolol will reduce the effect of her ICS on inflammation: timolol does not interfere with how her inhaled corticosteroid reduces airway inflammation.
Watch out: Assuming eye drops have no systemic effects; nasolacrimal occlusion reduces absorption but does not make a nonselective beta-blocker appropriate in asthma.
Rule: The timolol monograph lists bronchial asthma as a contraindication, so the prescriber should consider an alternative such as a prostaglandin analogue.
Source: Timolol maleate ophthalmic solution product monograph, Contraindications: bronchial asthma (DPD, checked 2026); Canadian Ophthalmological Society glaucoma guideline (Can J Ophthalmol 2009, reviewed 2023).

Ref resp-a-005

QUESTION 5 · ANSWER C

Answer: Nitrofurantoin 100 mg twice daily for 5 days. ML is a healthy, non-pregnant woman with lower urinary symptoms and no fever, flank pain or discharge, which is acute uncomplicated cystitis, and her normal kidney function makes nitrofurantoin suitable.
Why not the others:
- Ciprofloxacin 500 mg twice daily for 7 days: fluoroquinolones are not first line for cystitis and are kept in reserve owing to collateral damage and serious adverse effects, and resistant organisms are not suspected here.
- Amoxicillin 500 mg three times daily for 3 days: E. coli resistance to amoxicillin alone is high.
- Cephalexin 500 mg four times daily for 14 days: a course that long is far beyond what cystitis needs and adds adverse effects and resistance pressure.
Watch out: Using a fluoroquinolone for simple cystitis.
Rule: Bugs & Drugs (checked 2026) lists nitrofurantoin 100 mg twice daily for 5 days as first line for acute uncomplicated cystitis, alongside TMP-SMX DS twice daily for 3 days where local E. coli resistance is acceptable, or fosfomycin 3 g once.
Source: Alberta Health Services Bugs & Drugs, Urinary tract infection in adults (bugsanddrugs.org, checked 2026); AMMI Canada position statement on antimicrobial stewardship in UTI (2020); nitrofurantoin (Macrobid) product monograph (DPD, checked 2026).

Ref id-a-001

QUESTION 6 · ANSWER B

Answer: Acute dystonia; give benztropine or diphenhydramine. KB has an oculogyric crisis and torticollis two days after starting haloperidol, an early extrapyramidal reaction that responds quickly to an anticholinergic.
Why not the others:
- Tardive dyskinesia; reduce the haloperidol dose: tardive dyskinesia is a late effect that appears after months to years of exposure, not after two days.
- Akathisia; give propranolol: akathisia is inner and motor restlessness rather than fixed eye and neck postures, and propranolol does not reverse dystonia.
- Neuroleptic malignant syndrome; give dantrolene: it needs fever, generalized rigidity, altered mental status and autonomic instability, none of which KB has.
Watch out: Confusing early dystonia with tardive dyskinesia.
Rule: Acute dystonia is an early extrapyramidal reaction to a high-potency first-generation antipsychotic such as haloperidol, most common in young men, and listed in its product monograph. It responds quickly to an anticholinergic such as benztropine or to diphenhydramine.
Source: Haloperidol product monograph, Adverse reactions: extrapyramidal symptoms (DPD, checked 2026); benztropine product monograph (checked 2026).

Ref np-a-009

QUESTION 7 · ANSWER C

Answer: Tardive dyskinesia with long-term use. Metoclopramide is a dopamine antagonist that can cause extrapyramidal effects and tardive dyskinesia, which may be irreversible, and risk rises with duration and in older adults, so a 6-month order for an 80 year old is the concern.
Why not the others:
- Hypoglycemia from faster gastric emptying: not the key warning; faster emptying can shift the timing of glucose absorption, but that is managed by monitoring, not by a boxed warning.
- Severe constipation: unlikely, because metoclopramide is a prokinetic that speeds the gut.
- Hepatotoxicity requiring weekly liver tests: not a recognized major risk of metoclopramide, and the monograph does not call for weekly liver tests.
Watch out: Prescribing metoclopramide long term without considering tardive dyskinesia.
Rule: Health Canada labelling limits metoclopramide use generally to 12 weeks except in rare cases, at the lowest effective dose, because of tardive dyskinesia.
Source: Metoclopramide product monograph, Serious warnings: tardive dyskinesia, use limited to 12 weeks (DPD, checked 2026); Health Canada advisory: stronger warnings on movement disorders with metoclopramide (2011).

Ref gi-a-005

QUESTION 8 · ANSWER D

Answer: Codeine should not be used under age 12; suggest another option. Codeine is converted to morphine by CYP2D6, and ultra-rapid metabolizers can develop life-threatening morphine levels.
Why not the others:
- Codeine is safe at half the adult dose in children of this age and weight: the danger comes from how fast a child converts codeine to morphine, which a smaller dose does not predict or prevent.
- Codeine is preferred because it causes less constipation: it is an opioid and constipates like other opioids.
- Codeine can be used if the child has no asthma: the under-12 restriction applies to every child.
Watch out: Using codeine in children because of its mild reputation; ibuprofen and acetaminophen are first-line for pediatric fracture pain, with other opioids only if needed under supervision.
Rule: After child deaths, Health Canada recommended in 2013 that codeine not be used in children under 12 for any indication, and in 2016 that prescription codeine not be used after tonsil or adenoid removal in patients under 18.
Source: Health Canada Summary Safety Reviews of codeine (2013, 2016); codeine product monograph (DPD, checked 2026).

Ref pain-a-003

QUESTION 9 · ANSWER C

Answer: Refer him; prescription antibiotic ear drops are usually needed. Pain on tragal or pinna movement with canal discharge suggests acute otitis externa, which is treated with prescription topical antibiotic (often with a steroid) ear drops.
Why not the others:
- Oral amoxicillin from the pharmacy for 7 days: oral antibiotics are not first line for uncomplicated otitis externa, and amoxicillin is a prescription drug, not a pharmacy self-care product.
- Insert cotton swabs to dry the ear canal after each swim: swabs damage the canal skin and can worsen the infection.
- Use olive oil drops and wait 2 weeks: this leaves an established bacterial infection untreated, and oil does not treat infection.
Watch out: Treating otitis externa with oral antibiotics or cotton swabs.
Rule: Acute otitis externa is treated with prescription topical antibiotic ear drops, often with a steroid, not oral antibiotics. After the infection is treated, acidifying or drying drops after swimming may help prevention.
Source: Bugs & Drugs, Otitis externa (checked 2026); Rosenfeld RM et al. Clinical practice guideline: acute otitis externa (Otolaryngol Head Neck Surg 2014;150:S1).

Ref sc-a-009

QUESTION 10 · ANSWER C

Answer: Negative pregnancy tests and two forms of contraception. Isotretinoin is highly teratogenic and KF is sexually active, so preventing pregnancy is the main risk to manage.
Why not the others:
- Monthly eye examinations to screen for drug-induced cataracts: not a program requirement; visual changes are a warning to report, but they are not the main risk to manage before and during therapy.
- Daily vitamin A supplements to replace losses: isotretinoin is a vitamin A derivative, and adding vitamin A increases toxicity.
- Avoiding all dairy products during treatment: not a requirement of therapy, and it does nothing to prevent the serious risk, which is fetal harm.
Watch out: Underestimating isotretinoin's teratogenic risk management.
Rule: The Canadian isotretinoin monograph and pregnancy prevention program require negative pregnancy tests before, during and after treatment, and two effective forms of contraception from 1 month before, during, and for 1 month after therapy in people who can become pregnant.
Source: Isotretinoin (Epuris/Clarus) product monograph, Serious warnings and pregnancy prevention program (DPD, checked 2026).

Ref sp-a-002

QUESTION 11 · ANSWER A

Answer: Contact the prescriber; methotrexate for psoriasis is never taken daily. Oral methotrexate for psoriasis or rheumatoid arthritis is given once weekly, so this daily order would be a dangerous overdose.
Working:
1. 4 x 2.5 mg = 10 mg daily
2. 10 mg x 7 days = 70 mg a week
Why not the others:
- Dispense as written, since psoriasis needs daily dosing to control flares: wrong; oral methotrexate is not given daily for psoriasis.
- Dispense as written with a label to take on an empty stomach: adds an administration detail but leaves the fatal frequency unchanged.
- Change the directions to weekly and dispense: guesses at the intended regimen; the pharmacist must contact the prescriber rather than change the directions on their own.
Watch out: Dispensing or silently correcting a daily methotrexate order; daily-dosing errors are a recurring ISMP Canada alert.
Rule: Daily methotrexate dosing can cause marrow suppression, mucositis and death; contact the prescriber, then label the weekday clearly and counsel on weekly dosing and folic acid.
Source: ISMP Canada Safety Bulletin, Oral methotrexate weekly dosing errors (2019, 2023); methotrexate product monograph, Dosage: psoriasis (DPD, checked 2026).

Ref rx-a-013

QUESTION 12 · ANSWER B

Answer: 44 mL/min. BR is male, so SI Cockcroft-Gault with actual body weight and the 1.2 factor gives 43.5, about 44 mL/min, with no 0.85 correction.
Working:
1. 140 - 72 = 68
2. 68 x 80 kg = 5,440
3. 5,440 x 1.2 = 6,528
4. 6,528 / 150 umol/L = 43.5, about 44 mL/min
Why not the others:
- 37 mL/min: applies the 0.85 female factor to a male patient (43.5 x 0.85 = 37.0).
- 51 mL/min: divides by 0.85 instead (43.5 / 0.85 = 51.2).
- 96 mL/min: enters the weight in pounds (176 lb) instead of kilograms (68 x 176 x 1.2 / 150 = 95.7).
Rule: SI Cockcroft-Gault, as on PEBC's Part I reference sheet (dated 1 Mar 2024), is (140 - age) x weight in kg x 1.2 / SCr in umol/L; the 0.85 factor is for females only.
Source: PEBC Pharmacist Qualifying Examination Part I Reference Sheet, dated 1 Mar 2024 (Cockcroft-Gault in SI units: factor 1.2, actual body weight; 0.85 for females; pebc.ca, checked 16 Oct 2026); Cockcroft DW, Gault MH. Nephron 1976;16:31; KDIGO 2024 Clinical Practice Guideline for the Evaluation and Management of CKD, ch. 4 (medication management).

Ref calc-a-002

QUESTION 13 · ANSWER D

Answer: 28.8 mL/h. The weight-based hourly dose of 1,440 units/h divided by the bag concentration of 50 units/mL gives 28.8 mL/h.
Working:
1. 18 units/kg/h x 80 kg = 1,440 units/h
2. 25,000 units / 500 mL = 50 units/mL
3. 1,440 units/h / 50 units/mL = 28.8 mL/h
Why not the others:
- 0.48 mL/h: the same rate expressed per minute (28.8 / 60 = 0.48) but entered as mL/h, a large underdose.
- 14.4 mL/h: calculates the bag as 100 units/mL, as if it held 250 mL (1,440 / 100 = 14.4), halving the rate.
- 24.0 mL/h: uses 15 units/kg/h (15 x 80 = 1,200 units/h; 1,200 / 50 = 24.0), which is not the ordered dose.
Watch out: Miscalculating the bag concentration before converting units to mL.
Rule: A heparin infusion rate is the weight-based hourly dose divided by the bag concentration, as in Thrombosis Canada's unfractionated heparin guide (2024) and the heparin monograph.
Source: Thrombosis Canada, Unfractionated heparin clinical guide (updated 2024); heparin sodium injection product monograph (DPD, checked 2026).

Ref calc-a-007

QUESTION 14 · ANSWER A

Answer: It blocks first air from reaching the critical site. Hands placed upstream disrupt the first air flowing from the HEPA filter and can carry contaminants onto the vial stopper.
Why not the others:
- It warms the vial and degrades the antibiotic: warming is not the concern; the risk from this hand position is microbial contamination of the stopper.
- It increases the risk of a needlestick injury: needlestick risk depends on how needles are handled, not on whether hands block the airflow.
- It makes the hood's alarm sound and stop airflow: the air keeps flowing and carries particles from the hands onto the stopper.
Watch out: Not understanding the concept of first air.
Rule: In a laminar airflow workbench, first air flows directly from the HEPA filter over critical sites such as needle hubs and vial stoppers. Aseptic technique requires working at least 15 cm inside the hood with nothing between the filter and critical sites.
Source: NAPRA Model Standards for Pharmacy Compounding of Non-hazardous Sterile Preparations (2016), aseptic technique; USP <797> (referenced).

Ref comp-a-005

QUESTION 15 · ANSWER A

Answer: in the groups to which they were randomized, whether or not they took the assigned treatment. This preserves the balance that randomization created and gives a conservative, real-world estimate of effect.
Why not the others:
- only if they completed the study and took at least 80% of their assigned doses: this is a per-protocol analysis.
- according to the treatment they actually received: this is an as-treated analysis.
- after patients who stopped treatment because of adverse effects are excluded: this removes exactly the people who did worse on a drug.
Watch out: All three alternatives can reintroduce bias, because the reasons patients stop or switch treatment are often related to prognosis.
Rule: Intention-to-treat analysis keeps every randomized patient in the arm to which they were allocated, whether or not they took the assigned treatment.
Source: CONSORT 2010 Statement, item 16 (BMJ 2010;340:c332); Guyatt G et al. Users' Guides to the Medical Literature, 3rd ed. (2015), ch. 9.

Ref ebp-a-009

QUESTION 16 · ANSWER A

Answer: a lower positive predictive value. At 3% prevalence far fewer people truly have the disease, so false positives make up a much larger share of all positive results and the positive predictive value falls.
Why not the others:
- a higher positive predictive value: this is the opposite of what happens.
- a lower negative predictive value: it rises instead, because almost everyone who tests negative is truly disease-free when the disease is rare.
- a lower specificity: specificity does not change with prevalence, as stated in the scenario.
Watch out: Assuming predictive values are fixed test properties like sensitivity and specificity.
Rule: Predictive values depend on prevalence, while sensitivity and specificity are fixed properties of the test at a given threshold. Low-prevalence screening therefore needs confirmatory testing of positives.
Source: Gordis L. Epidemiology, 6th ed. (2019), ch. 5 Assessing validity of screening tests; Straus SE et al. Evidence-Based Medicine, 5th ed. (2018), ch. 5.

Ref ebp-a-012

QUESTION 17 · ANSWER D

Answer: Acknowledge his frustration calmly and explain the next steps. De-escalation starts with calm acknowledgement and a clear, specific next step, such as how many minutes remain and why.
Why not the others:
- Apologise and offer to fill his prescription ahead of those waiting: this is unfair to those waiting and pressures a rushed check, which raises error risk.
- Explain that prescriptions are filled in the order they are received: it may be true, but opening with policy sounds dismissive and often escalates the conflict.
- Ask a technician to speak with him while you finish checking: this avoids the conversation he wants, and he may feel ignored.
Watch out: Responding defensively rather than with empathy.
Rule: The NAPRA Professional Competencies (2024), competency 3.1 on effective communication, and the CPhA Code of Ethics (2023) on respect for patients support calm acknowledgement followed by a specific next step.
Source: NAPRA Professional Competencies (2024), 3.1 Use effective communication skills; CPhA Code of Ethics (2023).

Ref comm-a-008

QUESTION 18 · ANSWER D

Answer: Offer MMR, since she has no documented immunity. Born in 1985 without records, she counts as susceptible, and during outbreaks public health may recommend doses promptly.
Why not the others:
- No vaccine is needed for adults over 30: the cut-off is birth year, not current age.
- Order antibody testing and wait 3 months for results: there is no harm in vaccinating someone who may already be immune, and delay during an outbreak leaves her at risk.
- Recommend vitamin A supplements instead of vaccine: vitamin A does not prevent measles, so it cannot replace the vaccine.
Watch out: Assuming adults do not need MMR or delaying for serology.
Rule: Adults born in 1970 or later without evidence of measles immunity should receive MMR. Evidence is 1 documented dose of measles-containing vaccine for most adults (2 doses for health care workers, post-secondary students, travellers and military), laboratory evidence of immunity, or lab-confirmed disease.
Source: Canadian Immunization Guide, Measles vaccine chapter (updated 2024-2025).

Ref ph-a-009

QUESTION 19 · ANSWER B

Answer: It must be kept out of public reach and sold only after pharmacist intervention. Schedule II drugs need no prescription but require professional intervention by the pharmacist at the point of sale and are kept where there is no public access or self-selection.
Why not the others:
- Requires a prescription from a practitioner before sale: this describes Schedule I, not Schedule II.
- Sold from the pharmacy's self-selection professional services area: this describes Schedule III, where the pharmacist is available but intervention is not mandatory.
- Sold from any retail outlet, with no professional supervision at all: this describes unscheduled products.
Watch out: Mixing up the Schedule II and Schedule III conditions of sale.
Rule: NAPRA Schedule II drugs need no prescription but require pharmacist intervention at sale and storage with no public access or self-selection. Provinces that follow the NAPRA model apply the same conditions of sale.
Source: NAPRA, National Drug Schedules: Conditions of sale and outline of the schedules (napra.ca, checked 2026).

Ref law-a-005

QUESTION 20 · ANSWER C

Answer: A forcing function, such as oral syringes that cannot fit IV lines. A forcing function makes the error physically impossible, so it ranks at the top of the hierarchy of effectiveness.
Why not the others:
- Re-educating staff about the error: education relies on memory and fades with time and staff turnover.
- A new written policy telling staff to take extra care: this is among the weakest options because it depends entirely on vigilance.
- A warning reminder on the computer screen: a reminder helps somewhat but is often overridden when alerts are frequent.
Watch out: Relying on education or policies as the main fix for errors.
Rule: In the hierarchy of effectiveness described by ISMP Canada (2013) and used in the Canadian Incident Analysis Framework (2012), forcing functions, constraints and automation are strongest, followed by simplification and standardization, then reminders and checklists, with education and policies weakest.
Source: ISMP Canada, Designing effective recommendations: hierarchy of effectiveness (Ontario Critical Incident Learning, 2013); Canadian Incident Analysis Framework (2012).

Ref eth-a-010

Next step: time yourself. Take the free 20-question timed mock, at the real exam's pace, with a worked review of every answer, at getpebcprep.com/free-mock.

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