

PTCB PTCE® - Quiz Questions with Answers

1. Medications

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1.

Which medication is a selective serotonin receptor agonist used for migraine headaches?

Imitrex

Fiorinal

Fioricet

Cafergot

Correct answer: Imitrex

Imitrex (sumatriptan) is a selective serotonin receptor agonist that causes vasoconstriction and results in the relief of migraine headaches.

Fiorinal (aspirin-butalbital-caffeine), Fioricet (butalbital-acetaminophen-caffeine), and Cafergot (ergotamine-caffeine) are all used to help treat migraine headaches.

2.

If a drug product is required to be stored in warm conditions, what should the temperature range be?

30° to 40°C

40° to 50°C

20° to 25°C

8° to 15°C

Correct answer: 30° to 40°C

The temperature range 30° to 40°C is considered warm.

The temperature range 20° to 25°C is considered to be room temperature. The temperature range 8° to 15°C is considered to be cool. The temperature range 40° to 50°C is considered to be excessive heat.

3.

Calcium channel blockers can be used to treat hypertension and angina. Which of the following is classified as a calcium channel blocker?

Verapamil

Atenolol

Clonidine

Tamsulosin

Correct answer: Verapamil

Verapamil is classified as a calcium channel blocker. Other calcium channel blockers include amlodipine, nifedipine, nicardipine, felodipine, nisoldipine, and diltiazem.

Atenolol is classified as a beta-adrenergic receptor antagonist. Clonidine is classified as an alpha₂-adrenergic receptor agonist. Tamsulosin is classified as an alpha₁ receptor antagonist.

4.

Which type of container would be used for Ciloxan?

Dropper bottle

Applicator bottle

Collapsible tube

Prescription bottle

Correct answer: Dropper bottle

Ciloxan is ophthalmic ciprofloxacin, and a dropper bottle is used to dispense ophthalmic drops. A dropper bottle is also used when administering nasal, otic, and oral liquids in drop form.

Applicator bottles are used to administer liquids to wounds or skin surfaces. Collapsible tubes are used to dispense semisolids. Prescription bottles are used to dispense low-viscosity liquids.

5.

Which of the following root words does the drug rabeprazole act on?

Gastr/o

Accous/o

Derm/o

Ophthalm/o

Correct answer: Gastr/o

Rabeprazole is the generic for Aciphex, a proton pump inhibitor used for gastrointestinal reflux disorder (GERD), therefore acting on the stomach. The root word gastr/o is related to the stomach.

The root word accous/o is related to the ears. The root word derm/o is related to the skin. The root word ophthalm/o is related to the eyes.

6.

All except which of the following information is classified as prescriber information?

BIN

NPI number

DEA number

State license

Correct answer: BIN

A BIN is a bank identification number, which is used to identify third-party prescription insurance plans.

The following information is required from a prescriber:

- *NPI number*
 - *DEA number*
 - *State license*
 - *Name*
 - *Office address*
-

7.

Fentanyl is an opioid classified as a high-alert medication. High doses of fentanyl could cause which of the following?

Fatal respiratory suppression

Hypertension

Fatal bleeding

Hypoglycemia

Correct answer: Fatal respiratory suppression

High doses of fentanyl could cause fatal respiratory suppression. Opioids are prescribed to treat pain; however, they have the ability to cause fatal respiratory suppression if taken in excess.

Anticoagulants are classified as high-alert medication because they cause fatal bleeding. Insulin is classified as a high-alert medication because it could cause hypoglycemia. Neuromuscular blockers are classified as high-alert medication because they could cause cessation of breathing.

8.

Meloxicam and etodolac are non-steroidal anti-inflammatory drugs (NSAIDs) prescribed to patients for which purpose?

Block cyclooxygenase enzymes

Delay the breakdown of incretins

Neutralize stomach acid

Suppress nerve activity

Correct answer: Block cyclooxygenase enzymes

Meloxicam and etodolac are non-steroidal anti-inflammatory drugs (NSAIDs). Their mechanism of action is to block cyclooxygenase enzymes. NSAIDs are used to treat pain, inflammation, and fever. Other NSAIDs include celecoxib, diclofenac, naproxen, and ibuprofen.

Dipeptidyl peptidase-4 (DPP-4) inhibitors are used to delay the breakdown of incretins to treat type II diabetes. Antacids are used to neutralize stomach acid to treat heartburn or upset stomach. Anti-epileptic drugs (AEDs) are used to suppress nerve activity to treat seizures or psychiatric disorders.

9.

Which drug classification contains the suffix "-olone"?

Steroid

Local anesthetic

Macrolide

Antiulcer

Correct answer: Steroid

Corticosteroid drug names contain the suffix "-olone." Examples are triamcinolone, prednisolone, methylprednisolone.

The suffix "-caine" is used for local anesthetic agents, the suffix "-thromycin" is used for macrolide agents, and the suffix "-prazole" is used for antiulcer agents.

10.

An inventory technician received a new drug in the order that read “Keep Warm” on its label. At what temperature should the new drug be stored?

30°C to 40°C (86°F to 104°F)

20°C to 25°C (68°F to 77°F)

8°C to 15°C (46°F to 59°F)

2°C to 8°C (36°F to 46°F)

Correct answer: 30°C to 40°C (86°F to 104°F)

A “Keep Warm” drug should be placed in a room that has a temperature range of 30°C to 40°C (86°F to 104°F).

A “Room Temperature” drug should be placed in a room that has a temperature range of 20°C to 25°C (68°F to 77°F). A “Keep Cool” drug should be placed in a room that has a temperature range of 8°C to 15°C (46°F to 59°F). A “Keep Cold” drug should be placed in a refrigerator that has a temperature range of 2°C to 8°C (36°F to 46°F).

11.

All except which of the following information is required for repackaged medications?

Fill date

Drug manufacturer's name

Drug's strength

Beyond-use date

Correct answer: Fill date

The fill date is required for prescription labels and sterile product prescription labels, but it is not required for repackaged medications.

The following information is required for repackaged medications:

- *Drug's name*
 - *Drug manufacturer's name*
 - *Dosage form*
 - *Drug's strength*
 - *Beyond-use date*
 - *Lot number*
-

12.

Which of the following conditions causes a yeast infection of the skin and mucous membrane?

Candidiasis

Tinea infections

Herpes

Pneumonia

Correct answer: Candidiasis

Candidiasis is a type of fungus that causes various infections if there is an overgrowth in the body. Most notably, it causes oral thrush and vaginal yeast infections.

Tinea infections are fungal conditions that mainly affect the feet and skin. Herpes is a viral infection that causes painful blisters of the skin. Pneumonia is a bacterial lung infection that causes inflammation in the airway, blocking it with thick mucous.

13.

Alpha₁ receptor antagonists are used to treat hypertension and benign prostatic hyperplasia. Which of the following medications is classified as an alpha₁ receptor antagonist?

Tamsulosin

Clonidine

Triamterene

Bumetanide

Correct answer: Tamsulosin

Tamsulosin is classified as an alpha₁ receptor antagonist. All of the generic names in the alpha₁ receptor antagonist drug class end with the suffix "-osin."

Clonidine is classified as an alpha₂-adrenergic receptor agonist. Triamterene is classified as a potassium-sparing diuretic. Bumetanide is classified as a loop diuretic.

14.

Uwe Wollschlager brings in the following prescription:

Tussionex suspension

Sig: Take 2 tsp PO q4h prn cough

Disp: 12 oz

Using Roman numerals, how many ounces of Tussionex suspension will you dispense to Uwe Wollschlager?

XII

VII

IIX

XIIIV

Correct answer: XII

The prescription informs you that only 12 ounces (oz) are to be dispensed. Therefore, you need to identify the Roman numeral for the number 12. "X" is the Roman numeral for 10, and "I" is the Roman numeral for 1. Thus, XII = 10 + 1 + 1 = 12.

"V" is the Roman numeral for 5, and you are only permitted to subtract one numeral; therefore, XIIIV cannot be the correct answer because 3 numerals are being subtracted.

15.

Inhalers that include "Rinse mouth after use" on the auxiliary label contain which active ingredient?

Mometasone

Ipratropium

Tiotropium

Albuterol

Correct answer: Mometasone

The active ingredient mometasone, which is found in the inhaler Asmanex, is an inhaled corticosteroid and a potent anti-inflammatory. Corticosteroids suppress the immune system and allow for oral fungal infections to grow in the mouth. Therefore, it is important for patients to know when they start an inhaled corticosteroid or an inhaler that contains an ingredient similar to mometasone (i.e., fluticasone, budesonide) that they must rinse their mouths out after use.

Ipratropium (Atrovent) and tiotropium (Spiriva) are inhaled anticholinergics and do not affect the immune system. Therefore, patients do not have to rinse their mouths out after use.

Albuterol (Proair, Ventolin) is an inhaled beta agonist and is used to dilate the airway. This also does not affect the immune system and patients do not have to rinse their mouths after use.

16.

If a patient does not want a child-resistant top on their medication, what does a technician need to do?

Have the patient state that they want non-child resistant top on the back of the prescription and obtain the patient's signature

Inform the patient that the law prohibits the use of non-child resistant tops

Provide the patient with a non-child resistant top that they can place on the prescription after leaving the pharmacy

Place a non-child resistant top on the prescription for the patient

Correct answer: Have the patient state that they want non-child resistant containers on the back of the prescription and obtain the patient's signature

A patient is allowed to have a non-child resistant top on their medication; however, the pharmacy needs proof that the patient requested this type of container. The best method for proving that the patient requested a non-child resistant container is to have the patient write and then sign on the back of the prescription that they have requested a non-resistant container.

The answer "Inform the patient that the law prohibits the use of non-child resistant tops" is incorrect because patients are allowed to have them. A patient should not be given a non-child resistant top to place on the vial themselves, as this presents a liability issue for the pharmacy. The pharmacy should not place a non-child resistant top on the prescription for the patient without obtaining the patient's signed permission to do so.

17.

Which of the following antifungal medications is used to treat fungal nail infections?

Terbinafine

Nystatin (Nystop)

Ketoconazole (Nizoral)

Voriconazole (Vfend)

Correct answer: Terbinafine

Terbinafine is an antifungal used in the treatment of fungal nail infections. It comes in both tablet and cream form.

Nystatin (Nystop), ketoconazole (Nizoral), and voriconazole (Vfend) are antifungals but not indicated for nail infections.

18.

Which of the following cardiovascular conditions is experienced when there is an imbalance between oxygen supply and demand causing pressure-like pain in the chest?

Angina pectoris

Hypertension

Atrial fibrillation

Stroke

Correct answer: Angina pectoris

Angina pectoris is chest pain that is caused by an imbalance between oxygen supply and demand and is characterized by severe squeezing or pressure-like pain.

Hypertension is when systolic pressure is greater than 140 mm Hg and diastolic pressure is greater than 90 mm Hg. Atrial fibrillation is an irregular, rapid heart rate that causes poor blood flow and can lead to blood clots. A stroke results from an interruption of oxygen supply to the brain caused by either a rupture or clot in the blood vessel.

19.

You would apply the “For the Ear” auxiliary label on which of the following dosage forms?

Otic preparations

Ophthalmic preparations

Ointments

Suspensions

Correct answer: Otic preparations

The “For The Ear” auxiliary label would be applied when dispensing an otic preparation.

The “For the Eye” auxiliary label would be applied when dispensing an ophthalmic preparation. The “For Topical Use” auxiliary label would be applied when dispensing an ointment, cream, or lotion. The “Shake Well” auxiliary label would be applied when dispensing a suspension.

20.

Insulin aspart expires after how many days at room temperature?

28 days

3 days

7 days

30 days

Correct answer: 28 days

Insulin aspart expires after 28 days at room temperature. Once insulin's rubber stopper is punctured, it is also only good for 28 days.

All insulins should be refrigerated but not frozen.

The other choices are incorrect because insulin expires after 28 days at room temperature, not 3, 7, or 30 days.

21.

Combining naproxen with dabigatran can increase the risk of which of the following?

Bleeding

Thrush

Hypotension

Drowsiness

Correct answer: Bleeding

Dabigatran (Pradaxa) is an anticoagulant used to prevent clots. Combining aspirin with dabigatran can cause dangerous bleeding issues. Anticoagulants, such as warfarin, heparin, and enoxaparin, are used to prevent or treat blood clots.

Inhaled corticosteroids can cause oral thrush, a fungal infection, if the mouth is not rinsed after each use. Alpha₁ receptor antagonists can cause hypotension if they are used with additional blood pressure lowering agents. Opioids and benzodiazepines are known to increase drowsiness when taken with drugs that suppress the nervous system.

22.

How is the abbreviation "UD" often misinterpreted?

Mistaken as "unit dose"

Mistaken as "as directed"

Mistaken as "every day"

Mistaken as "right ear"

Correct answer: Mistaken as "unit dose"

"UD" is "ut dictum" in Latin, and that translates to "as directed." It is often mistaken for "unit dose," although there is no official abbreviation for this.

Fun fact: For centuries, prescriptions were written in Latin because physicians wanted to keep their remedies secret. Though this is no longer the case for modern medicine, the practice of using Latin abbreviations remains.

The abbreviation for "every day" is "q.d." or "QD." The abbreviation for "right ear" is "AD."

23.

Which one of the following cholesterol lowering medications works by forming a nonabsorbable complex with bile acids in the intestine?

Welchol (colesevelam)

Lopid (gemfibrozil)

Tricor (fenofibrate)

Zocor (simvastatin)

Correct answer: Welchol (colesevelam)

Welchol (colesevelam) binds to bile acids in the intestines and forms a complex which prevents gut reabsorption, thus lowering cholesterol.

Lopid (gemfibrozil) and Tricor (fenofibrate) are both fibric acid derivatives used to lower cholesterol. Zocor (simvastatin) inhibits the enzyme that helps to synthesize cholesterol.

24.

Which of the following is an example of an anti-epileptic drug?

Lyrice

Strattera

Protonix

Zyprexa

Correct answer: Lyrice

Lyrice is the brand name for pregabalin, which is classified as an anti-epileptic drug. Other anti-epileptic drugs include Tegretol, Klonopin, Valium, Depakote, Cerebyx, Neurontin, Vimpat, Lamictal, Keppra, Trileptal, Luminal, Dilantin, Mysoline, Gabitril, Topamax, Depakene, and Zonegran. Anti-epileptic drugs are used to treat seizures, nerve pain, and psychiatric disorders.

Strattera is the brand name for atomoxetine and is classified as an attention-deficit hyperactivity disorder (ADHD) agent. Protonix is the brand name for pantoprazole and is classified as a proton pump inhibitor. Zyprexa is the brand name for olanzapine and is classified as an antipsychotic agent.

25.

Yelena Kozlova brings in the following prescription:

Lanoxin 0.125 mg

Sig: Take 3 tabs PO daily

Disp: 90 tablets

What is the total mg of Lanoxin Yelena Kozlova takes each day?

0.375 mg

3.75 mg

0.25 mg

2.5 mg

Correct answer: 0.375 mg

To find the total mg of Lanoxin taken at each dose, you will need to multiply 0.125 mg by 3.

26.

Which of the following antidiabetic medications has a contraindication with use in patients with congestive heart failure?

Actos

Invokana

Jardiance

Farxiga

Correct answer: Actos

Actos (pioglitazone) is a thiazolidinedione, which has a class contraindication of congestive heart failure.

Invokana (canagliflozin), Jardiance (empagliflozin), and Farxiga (dapagliflozin) are all a part of sodium-glucose cotransporter-2 (SGLT-2) and do not have this contraindication as a class.

27.

Which of the following medications works by decreasing the thickness of mucus, thus helping to relieve coughing?

Guaifenesin

Benzonatate

Dextromethorphan

Cyproheptadine

Correct answer: Guaifenesin

Guaifenesin, the active ingredient in Mucinex, is an expectorant which works by decreasing the thickness of mucus, thus removing it from both the lungs and airway during coughing.

Both benzonatate and dextromethorphan are antitussives used to suppress coughing. Cyproheptadine is an antihistamine used to treat conditions such as allergies, insomnia, and rashes.

28.

Which class of medication can increase blood glucose?

Oral contraceptives

Amiodarones

Heparin

Cephalosporins

Correct answer: Oral contraceptives

Oral contraceptives can increase blood glucose in a test.

Amiodarones, heparin, and cephalosporins do not increase blood glucose.

29.

If an individual was looking for an over-the-counter antacid, which of the following drugs would they not be able to purchase?

Ranitidine

Lansoprazole

Famotidine

Omeprazole

Correct answer: Ranitidine

Ranitidine (Zantac) was an antihistamine used for reflux symptoms. In 2020, ranitidine was taken off the market due to cancerous compounds found in their products. The substitute that is used today is famotidine (Pepcid).

Lansoprazole (Prevacid), famotidine (Pepcid), and omeprazole (Prilosec) can be found over the counter or as a prescription from a prescriber.

30.

What is the brand name for ketoconazole?

Nizoral

Diflucan

Monistat

Vfend

Correct answer: Nizoral

The brand name for ketoconazole is Nizoral.

Diflucan is the brand name for fluconazole. Monistat is the brand name for miconazole. Vfend is the brand name of voriconazole.

31.

Which of the following electrolytes aids with sugar metabolism?

Chromium

Copper

Zinc

Potassium

Correct answer: Chromium

Chromium aids in the metabolism of sugar.

Copper is essential for proper blood formation. Zinc is needed for proper immune function. Potassium is needed for heart and nerve function.

32.

When taking a statin medication, patients should avoid drinking which of the following?

Grapefruit juice

Coffee

Soda

Milk

Correct answer: Grapefruit juice

When taking a statin medication, patients should avoid drinking grapefruit juice. Grapefruit juice will cause the statin medication to metabolize too quickly. Statin medications are HMG-CoA reductase inhibitors used to treat hypercholesterolemia and include simvastatin, atorvastatin, pravastatin, and lovastatin.

Coffee, soda, and milk are all acceptable beverages to consume when taking a statin medication.

33.

Which of the following is a side effect commonly associated with the α_1 receptor antagonist drug class?

Orthostatic hypotension

Bradycardia

Constipation

Weight gain

Correct answer: Orthostatic hypotension

Orthostatic hypotension (rapid decrease in blood pressure due to standing up too quickly) is a common side effect associated with the α_1 receptor antagonist drug class. Other common side effects include dizziness, priapism, and syncope. The α_1 receptor antagonist drug class is used to treat hypertension and benign prostatic hyperplasia.

Constipation is a common side effect associated with the anticholinergic drug class. Bradycardia is a common side effect associated with the α_2 -adrenergic receptor agonist drug class. Weight gain is a common side effect associated with the selective serotonin reuptake inhibitor drug class.

34.

Which of the following is a fibric acid derivative?

Gemfibrozil

Cholestyramine

Colesevelam

Colestipol

Correct answer: Gemfibrozil

Gemfibrozil is in the class of fibric acid derivatives.

Cholestyramine, colesevelam, and colestipol are all in the class of bile acid sequestrants.

35.

Which of the following medications is an antiplatelet?

Cilostazol

Apixaban

Heparin

Isosorbide mononitrate

Correct answer: Cilostazol

Cilostazol is an antiplatelet used to prevent and interfere with platelet aggregation, thus preventing and treating blood clots.

Both apixaban (Eliquis) and heparin are anticoagulants used to block the formation of fibrin, thus preventing and treating blood clots. Isosorbide mononitrate (Imdur) is a vasodilator used in the treatment of angina (chest pains).

36.

Which of the following medications is an antitussive?

Benzonatate

Guaifenesin

Oxymetazoline

Pseudoephedrine

Correct answer: Benzonatate

Benzonatate is an antitussive that suppresses coughs.

Guaifenesin is an expectorant that helps to remove mucus from both the lungs and airways during coughing. Oxymetazoline and pseudoephedrine are both decongestants that help to treat nasal congestion.

37.

Which of the following sig would be used if a prescriber's directions for the patient is to take 1 tablet by mouth every six hours?

1 tab PO q6h

1 T PO q6h

1 tab NPO q6h

1 tbs PO q6h

Correct answer: 1 tab PO q6h

The sig "1 tab PO q6h" means 1 tablet by mouth every six hours.

The sig "1 T PO q6h" means 1 temperature by mouth every six hours. The sig "1 tab NPO q6h" means 1 tablet nothing by mouth every six hours. The sig "1 tbs PO q6h" means 1 tablespoon by mouth every six hours.

38.

Which class of medications promotes sodium and water excretion in the urine which results in reduction of vasoconstriction?

Thiazide diuretics

Loop diuretics

Potassium sparing diuretics

Alpha-blockers

Correct answer: Thiazide diuretics

Thiazide diuretics promote sodium and water excretion in the urine, which results in lower sodium and water in blood vessels and leads to a reduction in vasoconstriction, thus lowering blood pressure.

Loop diuretics inhibit the reabsorption of sodium and chloride in the ascending loop of Henle, resulting in urinary excretion of water and a reduction in blood pressure. Potassium-sparing diuretics exchange sodium excretion in urine while returning potassium to the body. Alpha-blockers relax smooth muscle cells in the blood vessels and prostatic tissue, thus both lowering blood pressure and helping with urinary symptoms.

39.

Gabapentin and divalproex are anti-epileptic drugs (AEDs) prescribed to patients for which purpose?

Suppress nerve activity

Block the reuptake of serotonin and norepinephrine

Stimulate the pancreas to secrete insulin

Delay the breakdown of incretins

Correct answer: Suppress nerve activity

Gabapentin and divalproex are anti-epileptic drugs (AEDs) prescribed to patients for suppressing nerve activity. AEDs are used to treat seizures, nerve pain, or psychiatric disorders. Other AEDs include carbamazepine, lacosamide, lamotrigine, levetiracetam, and phenytoin.

Tricyclic antidepressants (TCAs) are used to block the reuptake of serotonin and norepinephrine to treat depression and eating disorders. Sulfonylureas are used to stimulate the pancreas to secrete insulin to treat type II diabetes. Dipeptidyl peptidase-4 (DPP-4) inhibitors are used to delay the breakdown of incretins to treat type II diabetes.

40.

Which of the following medications is an inhaled anticholinergic?

Atrovent

Asmanex

Pulmicort

Qvar

Correct answer: Atrovent

Atrovent (ipratropium) is an inhaled anticholinergic that is used in the treatment of asthma and COPD.

Asmanex (mometasone), Pulmicort (budesonide), and Qvar (beclomethasone) are all inhaled corticosteroids.

41.

If a physician used a word with the prefix "tachy-," what would the word mean?

Fast

Slow

Above

Below

Correct answer: Fast

The prefix "tachy-" means fast.

The prefix "brady-" means slow. The prefix "hyper-" means above. The prefix "hypo-" means below.

42.

Which of the following vitamins is found in sunlight?

Vitamin D3

Vitamin D2

Vitamin A

Vitamin E

Correct answer: Vitamin D3

Vitamin D3 (cholecalciferol) is a fat-soluble vitamin used to treat and prevent bone loss. The natural source can be found in sunlight but it is also sold as capsules over the counter (OTC).

Vitamin A (retinol) prevents an eye condition called keratomalacia. Vitamin A can be found in milk, butter, cheese, liver, and fish oils.

Vitamin D2 (ergocalciferol) is a vitamin used to prevent rickets in small children and osteomalacia in adults. It is found in fortified foods such as butter, milk, cheese, and egg yolk, as well as in fish oils. These are also found OTC as capsules.

Vitamin E (tocopherols) is an antioxidant for unsaturated fatty acids. This vitamin can be found in soybean oil, wheat and rice germ, nuts, eggs, and leafy green vegetables.

43.

Which of the following is an example of an antianxiety agent?

Clonazepam (Klonopin)

Afrin (oxymetazoline)

Patanol (olopatadine)

Flagyl (metronidazole)

Correct answer: Clonazepam (Klonopin)

Klonopin is the brand name for clonazepam and is classified as an antianxiety agent. Other antianxiety agents include Xanax, BuSpar, Librium, Tranxene, Valium, and Ativan.

Afrin is the brand name for oxymetazoline and is classified as a decongestant. Patanol is the brand name for olopatadine and is classified as an antihistamine. Flagyl is the brand name for metronidazole and is classified as an antiprotozoal agent.

44.

Simvastatin is an HMG-CoA reductase inhibitor used to reduce cholesterol. When is it best for a patient to take simvastatin?

At night

In the morning

Before meals

After meals

Correct answer: At night

It is best for patients to take statins at night. Statins are taken to help reduce cholesterol, and because most of the body's cholesterol is produced at night, statins are more effective when taken at night. The HMG-CoA reductase inhibitor (statin) drug class is categorized as a pregnancy category X.

It is not best for patients to take statins in the morning, before meals, or after meals.

45.

Which of the following classes of drugs may decrease the effectiveness of oral contraceptives?

Antibiotics

Beta blockers

Antacids

Opioids

Correct answer: Antibiotics

Antibiotics may decrease the effectiveness of oral contraceptives. Other drug classes that interact with oral contraceptives include anticonvulsants, antifungals, benzodiazepines, bronchodilators, corticosteroids, lipid-lowering agents, and tricyclic antidepressants.

Beta blockers, antacids, and opioids are not known to decrease the effectiveness of oral contraceptives.

46.

All of the following are considered benzodiazepines, except:

Pristiq

Xanax

Valium

Ativan

Correct answer: Pristiq

Pristiq (desvenlafaxine) is a serotonin-norepinephrine reuptake inhibitor (SNRI).

Xanax (alprazolam), Valium (diazepam) and Ativan (lorazepam) are all benzodiazepines.

47.

A prescription has the following directions: give 15 μg SQ ac. How can these directions be interpreted to the patient?

Give 15 micrograms subcutaneously before meals

Give 15 micrograms subcutaneously after meals

Give 15 micrograms sublingually every evening

Give 15 micrograms sublingually every morning

Correct answer: Give 15 micrograms subcutaneously before meals

The abbreviation " μg " means micrograms. The abbreviation "SQ" means subcutaneous, and the abbreviation "ac" means before meals. Therefore, directions that read "give 15 μg SQ ac" can be interpreted as "Give 15 micrograms subcutaneously before meals." Subcutaneous means under the skin.

The abbreviation used for "after meals" is "pc." The abbreviation for "sublingually" is "SL," and the abbreviation for "every evening" is "QPM." The abbreviation for "every morning" is "QAM."

48.

Opioids are considered high-alert medications for which of the following reasons?

They can cause fatal respiratory suppression.

They can cause fatal bleeding.

They can interfere with the ability to breathe.

They can cause fatal hypoglycemia.

Correct answer: They can cause fatal respiratory suppression.

Opioids are considered high-alert medications because they can cause fatal respiratory suppression. Opioids, such as morphine, hydromorphone, and fentanyl, are used to treat severe pain.

Anticoagulants are considered high-alert medications because they can cause fatal bleeding. Neuromuscular blockers are considered high-alert medications because they can interfere with the ability to breathe. Insulins are considered high-alert medications because they can cause fatal hypoglycemia.

49.

Which of the following indications would be treated with meperidine?

Acute pain

Osteoporosis

Hyperthyroidism

Endometriosis

Correct answer: Acute pain

Meperidine is the generic name for Demerol, which is classified as an opioid. Opioids are used to treat acute or chronic pain with different levels of severity. Other drugs used to treat acute or chronic pain are hydrocodone/acetaminophen (Norco), hydromorphone (Dilaudid), methadone, morphine (MS Contin, Kadian), oxycodone, oxycodone/acetaminophen (Percocet), and pentazocine.

Osteoporosis is treated with alendronate (Fosamax), risedronate, ibandronate, or zoledronic acid.

Hyperthyroidism is treated with methimazole (Tapazole) or propylthiouracil.

Endometriosis is treated with naproxen sodium (Aleve) or ibuprofen (Advil).

50.

Which of the following antibiotics is in the aminoglycosides class?

Gentamicin

Levofloxacin

Azithromycin

Doxycycline

Correct answer: Gentamicin

Gentamicin is in the class of aminoglycosides, which inhibits protein synthesis of bacteria.

Levofloxacin is in the fluoroquinolone class. Azithromycin is in the macrolide class. Doxycycline is in the tetracycline class.

51.

Prescribing errors include all except which of the following?

Pharmacy calculation

Omitted quantity

Missing route of administration

Incorrect medication strength

Correct answer: Pharmacy calculation

Pharmacy calculation is an error that occurs during the pharmacy workflow and is considered a dispensing error.

Errors that occur during the prescribing process by prescribers and/or healthcare providers are defined as "prescribing errors." Prescribing errors include omitted quantity, no route of administration, incorrect medication strength, missing or incorrect patient allergies, incorrect medication, and omitted refills.

52.

If a drug product is required to be stored in cool conditions, what should the temperature range be?

8° to 15°C

20° to 25°C

2° to 8°C

-25° to -10°C

Correct answer: 8° to 15°C

The temperature range 8° to 15°C is considered to be cool.

The temperature range 20° to 25°C is considered to be room temperature. The temperature range 2° to 8°C is considered to be cold. The temperature range -25° to -10°C is considered to be freezing.

53.

Which of the following is a tuberculosis agent?

Rifadin

Gastrocom

Dexilant

Carafate

Correct answer: Rifadin

Rifadin is the brand name for rifampin and is classified as a tuberculosis agent. Other tuberculosis agents include Seromyacin, Myambutol, Laniazid, Nydrazid, Rifamate, Floxin, and Priftin.

Gastrocom is the brand name for cromolyn and is classified as a mast cell stabilizer; cromolyn can be used to prevent asthmatic symptoms.

Dexilant is the brand name for dexlansoprazole and is classified as a proton pump inhibitor (PPI); PPIs are indicated to treat gastroesophageal reflux disease (GERD).

Carafate is the brand name for sucralfate and is classified as a coating agent that can be used as an antacid agent.

54.

Which of the following osteoporosis medications is dosed every six months?

Prolia

Forteo

Fosamax

Boniva

Correct answer: Prolia

Prolia (denosumab) is an injection dosed every six months.

Forteo (teriparatide) is an injection dosed daily. Fosamax (alendronate) is in the form of tablets that are dosed weekly. Boniva (ibandronate) is also in the form of tablets that are dosed monthly.

55.

Which one of the following is considered an alpha blocker?

Alfuzosin (Uroxatral)

Metoprolol (Toprol XL, Lopressor)

Spiroinolactone (CaroSpir, Aldactone)

Triamterene (Dyrenium)

Correct answer: Alfuzosin (Uroxatral)

Alfuzosin (Uroxatral) is an alpha receptor blocker used in the treatment of hypertension and benign prostatic hypertrophy.

Metoprolol (Toprol XL, Lopressor) is a beta-blocking agent. Spiroinolactone (CaroSpir, Aldactone) and triamterene (Dyrenium) are potassium-sparing diuretics.

56.

Which pregnancy category is defined as when there is no positive evidence of human fetal risks and the potential benefits may warrant the use of the drug in pregnant people despite potential risks?

Category C

Category A

Category D

Category X

Correct answer: Category C

Pregnancy Category C is best described as when the potential benefits may warrant the use of the drug in pregnant people despite potential risks, and there is no positive evidence of human fetal risk.

Pregnancy Category A is best described as the medication's use does not show any risks. Pregnancy Category X is best described as the risk of taking the medication clearly outweighs its benefits.

Pregnancy Category D is when there is positive evidence of human fetal risk, but the potential benefits may warrant the use of the drug in pregnant people despite potential risks.

The way to remember this is category A is acceptable, category B is somewhat acceptable, while category X is the worst — you would not want to use this in pregnant people. To distinguish category C and D, remember that there is no positive evidence of human fetal risk with C, but there is positive evidence for category D.

57.

Aspirin could cause which of the following in elderly patients?

Gastrointestinal bleeding

Drowsiness

Dry mouth

Hypoglycemia

Correct answer: Gastrointestinal bleeding

Aspirin, an antiplatelet, can result in an increased risk of gastrointestinal bleeding in elderly patients.

Anticholinergics could cause dry mouth in elderly patients. Benzodiazepines and nonbenzodiazepine sedatives could cause drowsiness in elderly patients. Insulin and sulfonylureas could cause hypoglycemia in elderly patients.

58.

Nitrostat® (nitroglycerin sublingual tablets) is a drug that has a special storage requirement. Which of the following best describes its special storage requirement?

Drug should not be removed from its original packaging

Drug should be refrigerated at 2-8°C until opened

Drug should not be exposed to light

Drug should be stored at room temperature

Correct answer: Drug should not be removed from its original packaging

Nitrostat® should not be removed from its original packaging because it contains nitroglycerin, which will quickly evaporate if it is stored outside of its original container.

Xalatan® and insulin should both be refrigerated at 2-8°C until opened. Once Xalatan® is opened, it can be stored at room temperature for up to 6 weeks.

Nitropress® should not be exposed to light, as light causes the sodium nitroprusside to quickly deactivate.

59.

Doxycycline monohydrate 100-mg capsules and doxycycline hyclate 100-mg tablets are examples of what?

Pharmaceutical alternatives

Pharmaceutical equivalents

Therapeutic equivalence

Bioequivalence

Correct answer: Pharmaceutical alternatives

Pharmaceutical alternatives contain the same therapeutic entity but are different salts, esters, or complexes of that entity, or are different dosage forms or strengths. The two different forms of doxycycline contain the same chemical entity but differ in salt and dosage form.

Pharmaceutical equivalents are drugs that contain the same chemical entity, quantity of active ingredient, dosage form, and route of administration. Therapeutic equivalence describes a drug that is pharmaceutically equivalent, produces the same clinical effect, and has the same safety profile. Bioequivalence describes the rate and extent of an active ingredient in a drug product so that it becomes available at its site of action.

60.

An individual is taking Ambien® (zolpidem) for insomnia. Which side effect would this patient most likely experience?

Drowsiness

Sedation

Respiratory depression

Constipation

Correct answer: Drowsiness

Drowsiness is a common side effect associated with Ambien® (zolpidem) and other non-benzodiazepine sedative hypnotics. Other side effects associated with this drug class include somnolence and dependency.

Sedation, respiratory depression, and constipation are all common side effects associated with opioids.

61.

What is the indication of pioglitazone?

Type 2 diabetes

Hypertension

Vertigo

Migraine

Correct answer: Type 2 diabetes

Pioglitazone belongs to a drug class called thiazolidinedione (TZD). TZDs reduce fasting plasma glucose and HbA1C. TZDs are indicated for the treatment of type 2 diabetes and not type 1 diabetes. Pioglitazone and rosiglitazone are the two agents in this drug class.

62.

Pharmacokinetics includes all except which of the following?

Administration of the drug

Absorption of the drug

Distribution of the drug

Metabolism of the drug

Correct answer: Administration of the drug

Pharmacokinetics is the study on how a drug functions in a living system; therefore, pharmacokinetics includes the absorption of the drug, the distribution of the drug, the metabolism of the drug, and the elimination of the drug.

The administration of the drug is how the drug is administered (e.g., orally, intravenously, rectally, etc.).

63.

Which of the following stimulants is not classified as a controlled substance?

Intuniv

Focalin

Vyvanse

Concerta

Correct answer: Intuniv

Intuniv (guanfacine) is classified as a stimulant used in the treatment of ADHD, but is not a controlled substance like many other stimulants.

Focalin (dexamethylphenidate), Vyvanse (lisdexamfetamine), and Concerta (methylphenidate ER) are considered schedule II stimulants and have a high potential for abuse and psychological/physiological dependence.

64.

The suffix "-oma" indicates which of the following?

Tumor

Pain

Enzyme

The study of

Correct answer: Tumor

The suffix "-oma" means tumor. Examples are sarcoma and carcinoma.

The suffix "-algia" means pain. Examples are myalgia, fibromyalgia, and analgia. The suffix "-ase" means enzyme. Examples are reductase and coagulase. The suffix "-logy" means the study of. Examples are physiology and biology.

65.

Which of the following medications is known to cause drowsiness?

Librium

Strattera

Levemir

Estrace

Correct answer: Librium

Librium (chlordiazepoxide) is in a drug class called benzodiazepine, which are known to cause drowsiness. Benzodiazepines include drugs such as alprazolam, chlordiazepoxide, clobazam, clonazepam, diazepam, lorazepam, midazolam, temazepam, and triazolam. Benzodiazepines are used for indications such as anxiety, insomnia, agitation, seizures, muscle spasms, and alcohol withdrawal.

Strattera is a selective norepinephrine reuptake inhibitor that is used to treat attention deficit, but is not a stimulant like Adderall. Levemir is an insulin and can cause hypoglycemia or low blood sugar. Estrace is an estrogen derivative that is known to cause carcinogenic effects.

66.

Which of the following conditions is characterized by abnormally high internal eye pressure?

Glaucoma

Vertigo

Conjunctivitis

Otitis media

Correct answer: Glaucoma

Glaucoma is a chronic disorder that is characterized by abnormally high internal eye pressure that can damage the optical nerve and possibly lead to vision loss.

Vertigo is a sensation when an individual feels where the objects around them are moving, when, in reality, they are not, while conjunctivitis is an acute inflammation of the conjunctiva that is caused by bacteria, viruses, fungi, or allergies. Otitis media is an infection of the middle ear.

67.

Phosphodiesterase-5 inhibitors (PDE-5 inhibitors) are used for which of the following indications?

Erectile dysfunction

Hypercholesterolemia

Cardiac arrhythmias

Vertigo

Correct answer: Erectile dysfunction

PDE-5 inhibitors are used for indications of erectile dysfunction. PDE-5 inhibitors are also used to treat pulmonary arterial hypertension. The generic names of PDE-5 inhibitors include sildenafil, tadalafil, and vardenafil.

Anti-arrhythmic agents are used for indications of cardiac arrhythmias. HMG-COA reductase inhibitors are used for indications of hypercholesterolemia. Anticholinergics are used for indications of vertigo.

68.

Which drug classification uses the suffix "-statin"?

HMG CoA reductase inhibitor

H2 receptor antagonist

Angiotensin II receptor antagonist

Steroid

Correct answer: HMG CoA reductase inhibitor

HMG CoA reductase inhibitor is the drug class that uses the suffix "-statin." HMG CoA reductase inhibitors are used to treat high cholesterol. Examples of HMG CoA reductase inhibitor include atorvastatin, fluvastatin, lovastatin, pitavastatin, pravastatin, rosuvastatin, and simvastatin.

The suffix "-tidine" is used for H2 receptor antagonist agents, while the suffix "-sartan" is used for angiotensin II receptor antagonist agents. The suffix "-olone" is used for steroid agents.

69.

Priapism and hypotension are side effects associated with which of the following drug classes?

Phosphodiesterase-5 inhibitors (PDE-5 inhibitors)

HMG-COA reductase inhibitors (statins)

Selective serotonin reuptake inhibitors (SSRIs)

Serotonin-norepinephrine reuptake inhibitors (SNRIs)

Correct answer: Phosphodiesterase-5 inhibitors (PDE-5 inhibitors)

Priapism and hypotension are side effects associated with the PDE-5 inhibitor drug class. The PDE-5 inhibitor drug class is used to treat erectile dysfunction and pulmonary arterial hypertension. The generic names of the medications in this class end in "-afil" and include sildenafil, tadalafil, and vardenafil.

Muscle aches, constipation, and myopathy are side effects associated with the statin drug class. Weight gain, weight loss, and reduced sex drive are the side effects associated with the SSRI drug class. Heart palpitations, increased blood pressure, and tachycardia are side effects associated with the SNRI drug class.

70.

Which of the following best describes pregnancy Category A?

The medication's use does not show any risk

The risk of taking the medication clearly outweighs its benefits

The benefits of taking the medication outweighs its risks

The medication's benefits may outweigh its risks

Correct answer: The medication's use does not show any risk

Pregnancy Category A is best described as the medication's use does not show any risk.

Pregnancy Category C is best described as the medication's benefits may outweigh its risks.

Pregnancy Category D is best described as the benefits of taking the medication outweighs its risks.

Pregnancy Category X is best described as the risk of taking the medication clearly outweighs any possible benefits, thus, Pregnancy Category X drugs are contraindicated during pregnancy.

71.

Which of the following over-the-counter products is indicated for constipation?

Metamucil

Mylanta

Bonine

Zilactin

Correct answer: Metamucil

Psyllium fiber is the generic name for Metamucil and is classified as a laxative. Laxatives are indicated to treat constipation. Other over-the-counter (OTC) laxatives include Citrate of Magnesium, Colace, Dulcolax, Milk of Magnesia, Miralax, Senokot, and Senokot-S.

Mylanta is classified as an antacid, Bonine is classified as an antiemetic, and Zilactin is classified as a cold sore drug.

72.

Codeine is commonly used for which of the following indications?

Cough

Fever

Rheumatoid arthritis

Osteoarthritis

Correct answer: Cough

Codeine is commonly used for a cough. It is also commonly used for pain.

The non-steroidal anti-inflammatory drug class is used to treat fever, rheumatoid arthritis, and osteoarthritis.

73.

Which of the following is considered a mucosal protectant for the GI?

Sucralfate

Mesalamine

Sulfasalazine

Aspirin

Correct answer: Sucralfate

Sucralfate is a mucosal protectant of the GI.

*Mesalamine and sulfasalazine are both anti-inflammatories used in GI conditions.
Aspirin is an anti-inflammatory, but not used in the GI.*

74.

If a drug product should not be stored in an area with excessive heat, what temperature range should you avoid?

40° to 50°C

30° to 40°C

20° to 25°C

8° to 15°C

Correct answer: 40° to 50°C

Excessive heat is considered any temperature above 40°C.

The temperature range 30° to 40°C is considered warm. The temperature range 20° to 25°C is considered to be room temperature. The temperature range 8° to 15°C is considered to be cool.

75.

Anticoagulants are considered high-alert medications for which of the following reasons?

They can cause fatal bleeding.

They can interfere with the ability to breathe.

They can cause fatal respiratory suppression.

They can cause fatal hypoglycemia.

Correct answer: They can cause fatal bleeding.

Anticoagulants are considered high-alert medications because they can cause fatal bleeding. Anticoagulants, such as heparin, warfarin, and enoxaparin, are used to prevent blood clots.

Neuromuscular blockers are considered high-alert medications because they can interfere with the ability to breathe. Opioids are considered high-alert medications because they can cause fatal respiratory suppression. Insulins are considered high-alert medications because they can cause fatal hypoglycemia.

76.

A patient approaches the pharmacy counter and inquires about nasal congestion relief. The patient states that they are healthy otherwise, and they take a once-daily multivitamin. The patient does not use any over-the-counter or prescription drugs. Which of the following medication is most likely to be recommended by the pharmacist?

Pseudoephedrine

Amoxapine

Fluvoxamine

Divalproex

Correct answer: Pseudoephedrine

Pseudoephedrine is an example of a decongestant and is used to relieve nasal congestion.

Amoxapine is an example of an antianxiety agent and is used to treat anxiety and panic disorders. Fluvoxamine is an example of a selective serotonin reuptake inhibitor (SSRI) and is indicated to treat depression and obsessive-compulsive disorder (OCD). Divalproex is an example of a bipolar agent and is used to treat bipolar disease.

77.

Which HIV medication is responsible for inhibiting HIV from entering host cells?

Maraviroc

Efavirenz

Nevirapine

Tenofovir

Correct answer: Maraviroc

Maraviroc is a chemokine receptor type 5 antagonist that works by blocking HIV from entering host cells.

Efavirenz and nevirapine are both non-nucleoside reverse transcriptase inhibitors (NNRTIs), which inhibit the formation of the proviral DNA, thus blocking it from forming its RNA counterparts. Tenofovir works similarly to NNRTIs in helping to prevent the spread of the virus to healthy cells.

78.

All of the following are considered estrogen replacement therapy, except:

Provera

Premarin

Estrace

Climara

Correct answer: Provera

Provera (medroxyprogesterone) is a progestin derivative hormone replacement.

Premarin (conjugated estrogen), Estrace (estradiol), and Climara (estradiol transdermal) are all considered estrogen replacement therapies.

79.

A bottle of Patanol contains 10 mL. The patient is directed to place 1 drop in both eyes twice daily. Given that there are 20 drops per milliliter, how long will this bottle of eye drops last for this patient?

50 days

30 days

45 days

90 days

Correct answer: 50 days

This is a days' supply calculation question.

Given information: There are 20 drops per 1 milliliter. Therefore, there would be 200 drops per 10 mL: $10 \text{ mL} \times 20 \text{ drops/1 mL} = 200 \text{ drops}$.

The patient is directed to instill 1 drop in both eyes twice daily, so the patient will use 4 drops per day.

Because the bottle contains 200 drops (see calculation above) and the patient uses a total of 4 drops per day, the following calculation shows how long the bottle of eye drops will last:

$$200 \text{ drops} / (4 \text{ drops/day}) = 50 \text{ days}$$

80.

To improve the quality of care that patients receive, pharmacy technicians should understand which drug classifications are prescribed for which body systems, as this will aid in the technician's ability to notify the pharmacist when they believe the patient has been prescribed the wrong drug. Anticoagulants, antiplatelets, thrombolytics, and antihemorrhagics are used to treat indications of which body system?

Cardiovascular system

Gastrointestinal system

Nervous system

Respiratory system

Correct answer: Cardiovascular system

Anticoagulants, antiplatelets, thrombolytics, and antihemorrhagics are used to treat indications of the circulatory system.

Antacids, H₂-antagonists, proton pump inhibitors, antiemetics, laxatives, and antidiarrheals are used to treat indications of the gastrointestinal system. Anesthetics, analgesics, anticonvulsants, antidepressants, antiparkinsonian drugs, antipsychotics, and stimulants are used to treat indications of the nervous system. Decongestants, bronchodilators, cough medicines, and H₁-antagonists are used to treat indications of the respiratory system.

81.

Which of the following opioid medications comes in an extended release form that can be prescribed to alleviate severe pain?

Oxycodone

Hydromorphone

Tramadol

Methadone

Correct answer: Oxycodone

Oxycodone is an opioid analgesic and is used to treat chronic pain, such as severe back pain or short-term post-operative pain relief. Chronic use of an opioid analgesic is not recommended due to its potential for tolerance and dependency. Oxycodone comes in both extended release (Oxycontin) and immediate release (Roxicodone).

Hydromorphone, tramadol, and methadone are all opioid medications that are also used for pain relief, but are available as immediate release only.

82.

Which drug classification uses the suffix "-pril"?

ACE inhibitor

Systemic antifungal

Antiabetic

Beta-blocker

Correct answer: ACE inhibitor

ACE (angiotensin converting enzyme) inhibitor is the drug class that uses the suffix "-pril." ACE inhibitors are used for hypertension, heart failure, myocardial infarction, and kidney protection in diabetic patients. ACE inhibitors include benazepril, enalapril, lisinopril, quinapril, and ramipril.

The suffix "-conazole" is used for systemic antifungal agents, the suffix "-glitazone" is used for antidiabetic agents, and the suffix "-olol" is used for beta-blocker agents.

83.

Which potassium-sparing diuretic drugs increase one's urinary sodium and decrease the urinary potassium by blocking the individual's sodium-potassium exchange?

Triamterene and amiloride

Eplerenone and spironolactone

Triamterene and spironolactone

Eplerenone and amiloride

Correct answer: Triamterene and amiloride

Triamterene and amiloride are potassium-sparing diuretic drugs that increase one's urinary sodium and decrease the urinary potassium by blocking the individual's sodium-potassium exchange. Potassium-sparing diuretics are used to treat hypertension and heart failure.

Eplerenone and spironolactone are potassium-sparing diuretic drugs that antagonize an individual's aldosterone receptors.

84.

Which of the following antidepressants is an SSRI?

Fluoxetine

Duloxetine

Doxepin

Venlafaxine

Correct Answer: Fluoxetine

Fluoxetine (Prozac) is in the class of selective serotonin reuptake inhibitors (SSRIs), which are responsible for inhibiting the reuptake of serotonin, thus treating various conditions such as depression, behavior disorders, and eating disorders.

Duloxetine (Cymbalta) and venlafaxine (Effexor) are in the class of serotonin-norepinephrine reuptake inhibitors (SNRIs), which block the reuptake of both serotonin and norepinephrine to treat various disorders such as depression, eating and anxiety disorders, and diabetic peripheral neuropathy.

Doxepin is in the class of tricyclic antidepressants (TCAs), which also aid in blocking serotonin and norepinephrine, and treat depression, eating and anxiety disorders, and diabetic peripheral neuropathy.

85.

Which of the following agent is indicated to treat otitis media?

Sulfamethoxazole - trimethoprim

Fluconazole

Oseltamivir

Enfuvirtide

Correct answer: sulfamethoxazole - trimethoprim

Sulfamethoxazole - trimethoprim, commonly known by its brand name "Bactrim," belongs to an antimicrobial drug class called sulfonamide. Sulfonamide is indicated to treat otitis media, urinary tract infection, and lower respiratory tract infection.

Fluconazole is an antifungal agent indicated for fungal infection. Oseltamivir is an antiviral agent that is used to treat influenza virus. Enfuvirtide is a fusion inhibitor that is used to treat HIV.

86.

Which of the following abbreviations is used to indicate "right eye" on a prescription?

OD

OS

AD

AS

Correct answer: OD

The abbreviation "OD" means "right eye."

The abbreviation "OS" means "left eye." The abbreviation "AD" means "right ear," and the abbreviation "AS" means "left ear."

87.

What database do healthcare systems use to collect, analyze, and report medication errors or adverse drug reactions?

MedMarx

MedWatch

MERP

FAERS

Correct answer: MedMarx

MedMarx is United States Pharmacopoeia's (USP) internet database used by healthcare systems to collect, analyze, and report medication errors or adverse drug reactions.

MedWatch is the FDA's voluntary reporting program that allows the reporting of adverse health events. FAERS is another database that tracks the errors and events submitted to the FDA. MERP is the Institute of Safe Medication Practice's medication error reporting program.

88.

Which of the following is not a characteristic of two therapeutic equivalent products?

They have the same AWP.

They are pharmaceutically equivalent.

They produce the same clinical effect.

They have the same safety profile.

Correct answer: They have the same AWP

Two drug products are deemed to be therapeutically equivalent if they have the following:

- *They are pharmaceutically equivalent.*
- *They produce the same clinical effect.*
- *They have the same safety profile.*

AWP stands for "Average Wholesale Price." Therapeutically equivalent products do not have to have the same AWP. The goal of therapeutic interchange is to reduce drug cost.

89.

If an individual is diagnosed with gastroesophageal reflux disease (GERD), which medication would the patient most likely be prescribed?

Dexilant® (dexlansoprazole)

Amaryl® (glimepiride)

Effexor® (venlafaxine)

Singulair® (montelukast)

Correct answer: Dexilant® (dexlansoprazole)

Dexilant® (dexlansoprazole) is the medication that would most likely be prescribed for GERD. Other medications used to treat GERD include Reglan® (metoclopramide), Zantac® (ranitidine), Pepcid® (famotidine), and Aciphex® (rabeprazole).

Amaryl® (glimepiride) is used to treat diabetes mellitus. Effexor® (venlafaxine) is used to treat depression. Singulair® (montelukast) is used to treat asthma.

90.

Fluoroquinolone antibiotics often cause individuals taking them to develop which of the following adverse drug reaction?

Tendonitis

Hyperglycemia

Hematologic effects

Dry cough

Correct answer: Tendonitis

Fluoroquinolone antibiotics often cause individuals taking them to develop tendonitis or joint swelling. Fluoroquinolone antibiotics may also cause tendon rupture. These drugs contain boxed warnings due to the risks associated with them.

Hyperglycemia can occur when taking corticosteroids. Hematologic effects can occur when taking clozapine. Dry cough can occur when taking angiotensin-converting enzyme (ACE) inhibitors.

91.

Which of the following laxatives is bulk-forming?

Methylcellulose

Bisacodyl

Docusate

Sennosides

Correct answer: Methylcellulose

Methylcellulose is a bulk-forming laxative.

Both bisacodyl and sennoside are stimulant laxatives. Docusate is a stool softener laxative.

92.

Which of the following antipsychotic medications requires prescribers, patients, and pharmacies to be enrolled in a restricted drug program?

Clozapine

Lurasidone

Haloperidol

Olanzapine

Correct answer: Clozapine

Clozapine has a severe adverse effect of potentially causing agranulocytosis, which can severely decrease white blood cells (WBCs) and absolute neutrophil counts (ANC). Therefore, it is important for both prescribers and pharmacies to register for the Clozaril Administration Registry Enrollment (CARE) in order to care for patients taking clozapine.

Lurasidone, haloperidol, and olanzapine do not require any special registration in order to prescribe, dispense, or take.

93.

A pharmacy technician may do all except which of the following tasks?

Counsel patients based on prescriptions dispensed

Transcribe prescriptions that were written, faxed, or electronically sent from prescribers

Affix labels on prescription containers

Identify situations that require professional judgement

Correct answer: Counsel patients based on prescriptions dispensed

A pharmacy technician is not allowed to counsel patients on their medications or other health concerns. Only pharmacists are authorized to counsel patients.

A pharmacy technician is permitted to ask a patient if they have questions for the pharmacist and affix (or place) labels on prescription vials. Pharmacy technicians may also transcribe (or enter) prescriptions into the computer, compound oral or intravenous solutions, prepackage bulk medications, order medications, prepare medication inventories, and assist with inpatient and outpatient dispensing. Technicians may also identify or alert pharmacists of situations that require professional judgement.

94.

If an ear medication was placed in a patient's eye, what type of error would it be?

Administration technique error

Dispensing judgment error

Dispensing mechanical error

Prescribing error

Correct answer: Administration technique error

If an ear medication was placed in a patient's eye, it would be considered an administration technique error, as the error occurred during the administration of the medication.

Prescribing errors occur while the prescriber is writing the prescription, and dispensing errors (judgment and mechanical) occur while the pharmacy is filling the prescription.

95.

What is the function of magnesium in the body?

Muscle function

Red blood cell formation

Heart and nerve function

Metabolism of sugar

Correct answer: Muscle function

Magnesium is an example of an electrolyte. Electrolytes are the smallest of chemicals that are important for the cells in the body to function and allow the body to work. Magnesium is needed for muscle function.

Iron is essential for red blood cell formation. Potassium is important for heart and nerve function, and chromium aids in metabolism of sugars.

96.

Victoza and Byetta are GLP-1 agonists that expire after how many days at room temperature?

30 days

28 days

7 days

3 days

Correct answer: 30 days

Victoza and Byetta are GLP-1 agonists that expire after 30 days at room temperature or 30 days after the first use, whichever comes first. These two GLP-1 agonists also expire 30 days after they are opened. GLP-1 agonists should be refrigerated but never frozen.

The other choices are incorrect because Victoza and Byetta expire after 30 days at room temperature, not 3, 7, or 28 days.

97.

If a physician orders Detrol® (tolterodine) 2 mg tablets for a patient, you know that the patient has most likely been diagnosed with which of the following?

Benign Prostatic Hypertrophy (BPH)

Arthritis

Allergies

Gastroesophageal reflux disease

Correct answer: Benign Prostatic Hypertrophy (BPH)

Detrol® (tolterodine) is used to treat BPH. Other medications used to treat BPH include alfuzosin (Uroxatral) and tamsulosin (Flomax).

Arthritis is treated with Trexall® (methotrexate). Allergies are treated with Zyrtec® (cetirizine), Allegra® (fexofenadine), and Claritin® (loratadine). Gastroesophageal reflux disease is treated with Prilosec® (omeprazole), Nexium® (esomeprazole), and Prevacid® (lansoprazole).

98.

MedMarx is overseen by which of the following organizations?

United States Pharmacopoeia

Food and Drug Administration

Centers for Disease Control and Prevention

Institute of Safe Medication Practices

Correct answer: United States Pharmacopoeia

The United States Pharmacopoeia (USP) is the organization responsible for overseeing MedMarx. MedMarx is used by healthcare systems to track and trend medication errors and adverse drug reactions.

The Food and Drug Administration is the organization that receives reports from the FAERS database and is responsible for overseeing MedWatch. The Institute of Safe Medication Practices is the organization responsible for overseeing the MERP. The Centers for Disease Control and Prevention works with the Food and Drug Administration to review adverse events that occur after vaccinations.

99.

If a patient is diagnosed with hypertension, which of the following drugs will they most likely be prescribed?

Atenolol

Diethylpropion

Lanoxin

Atorvastatin

Correct answer: Atenolol

Atenolol is an example of a cardio-selective beta blocker. A beta blocker is one of the drug classes that are indicated to treat hypertension. Ternomin is the brand name of atenolol.

Diethylpropion is a stimulant drug that is used as an appetite suppressant for short-term management of obesity. Lanoxin is an example of a cardiac glycoside and is used to treat congestive heart failure. Atorvastatin is an example of an HMG-CoA reductase inhibitor and is used to treat hyperlipidemia or high cholesterol.

100.

The generic names of the phosphodiesterase-5 inhibitor (PDE-5 inhibitor) drug class all end in which of the following?

-afil

-pril

-statin

-sartan

Correct answer: -afil

The generic names of the phosphodiesterase-5 (PDE-5) inhibitor drug class all end in "-afil." The generic names in the PDE-5 inhibitor drug class include sildenafil, tadalafil, and vardenafil. This drug class is used to treat erectile dysfunction.

The generic names of the angiotensin receptor blocker (ARB) drug class all end in "-sartan." The generic names of the angiotensin converting enzyme (ACE) inhibitor drug class all end in "-pril." The generic names of the HMG-CoA reductase inhibitor drug class all end in "-statin."
