CCMA Practice Quiz Study Reference

Foundational Knowledge & Basic Science • Anatomy & Physiology

DOMAIN 1: FOUNDATIONAL KNOWLEDGE AND BASIC SCIENCE

1. A provider documents "pt c/o SOB x 3 days." The CCMA correctly interprets this as:

A. Patient complains of sore throat for 3 days
B. Patient complains of shortness of breath for 3 days
C. Patient with swelling of both extremities for 3 days
D. Patient reports sudden onset bleeding for 3 days

2. Which of the following suffixes correctly means "surgical removal of"?

A. -itis
B. -ectomy
C. -ostomy
D. -plasty

3. A medication label reads "take 1 tablet SL PRN for chest pain." The CCMA correctly instructs the patient to:

A. Swallow the tablet whole when chest pain occurs.
B. Chew the tablet and swallow when chest pain occurs.
C. Place the tablet under the tongue when chest pain occurs.
D. Apply the tablet to the skin when chest pain occurs.

4. A provider orders "1 mL IM into the deltoid." The CCMA correctly understands that "IM" refers to which route of administration?

A. Into the dermis, just below the skin surface
B. Into a vein for direct bloodstream delivery
C. Into the muscle tissue
D. Under the skin into the subcutaneous layer

5. A CCMA is reviewing a patient's chart that notes "Dx: HTN, DM2." Which of the following correctly interprets these abbreviations?

A. Dextrose infusion; deep tissue massage 2 times weekly
B. Diagnosis: hypertension and type 2 diabetes mellitus
C. Discharge: hyperthyroidism and diuretic medication 2x daily
D. Differential: hemothorax and tricuspid defect 2nd degree

6. A CCMA is preparing to administer a medication that is classified as a loop diuretic. Which of the following is the expected effect of this drug class?

A. Increased heart rate and bronchodilation
B. Decreased gastric acid production
C. Increased urine output
D. Decreased blood glucose levels

7. Which of the following correctly describes the difference between a drug's generic name and its brand name?

A. The generic name is assigned by the manufacturer; the brand name is assigned by the FDA.
B. The generic name identifies the active ingredient; the brand name is the manufacturer's trademarked name.
C. The generic name is used only after a drug goes off patent; the brand name is used during clinical trials.
D. The generic and brand names are interchangeable and refer to the exact same formulation in all cases.

8. A CCMA is reviewing a patient's medication list and sees "atenolol 25 mg PO Daily." The CCMA recognizes atenolol as which drug class?

A. ACE inhibitor
B. Beta-blocker
C. Calcium channel blocker
D. Thiazide diuretic

9. A provider prescribes "amoxicillin 500 mg PO TID x 10 days." The CCMA calculates that the patient will take how many total doses over the course of treatment?

A. 20
B. 25
C. 30
D. 35

10. Which of the following word roots correctly means "kidney"?

A. Hepat
B. Cardi
C. Nephr
D. Oste

11. A CCMA is reviewing a medication order for a patient and sees the notation "NKA." Which of the following does this mean?

A. No known allergies
B. Not keeping appointment
C. New kidney assessment
D. Normal kidney anatomy

12. A CCMA is educating a student about the five "rights" of medication administration. Which of the following is NOT one of the five rights?

A. Right patient
B. Right dose
C. Right prescriber
D. Right route

13. A patient's chart lists a drug allergy to sulfonamides. The CCMA should be aware that this allergy may be relevant when which of the following medications is prescribed?

A. Azithromycin
B. Trimethoprim-sulfamethoxazole (TMP-SMX)
C. Amoxicillin-clavulanate
D. Ciprofloxacin

14. Which of the following correctly describes the term "half-life" as it relates to pharmacology?

A. The time it takes for a drug to reach its peak concentration in the bloodstream
B. The time required for the body to eliminate half of an administered drug dose
C. The duration of time that a drug produces its maximum therapeutic effect
D. The point at which a drug's therapeutic effect equals its toxic effect

15. A CCMA is reviewing a new patient intake form. The patient lists "penicillin — hives" under allergies. Which of the following describes this type of reaction?

A. Toxic reaction due to excessive dosing
B. Idiosyncratic reaction unique to the individual
C. Allergic (hypersensitivity) reaction
D. Side effect occurring at therapeutic doses in all patients

DOMAIN 2: ANATOMY AND PHYSIOLOGY

16. Which of the following cranial nerves is responsible for the sense of smell?

A. Cranial nerve II (optic)
B. Cranial nerve I (olfactory)
C. Cranial nerve VII (facial)
D. Cranial nerve V (trigeminal)

17. A CCMA is reviewing anatomy with a medical student. Which of the following organs is located in the right upper quadrant (RUQ) of the abdomen?

A. Spleen
B. Sigmoid colon
C. Liver
D. Descending colon

18. The process by which oxygen and carbon dioxide are exchanged between the alveoli and the blood is called:

A. Ventilation
B. Perfusion
C. External respiration
D. Cellular respiration

19. A CCMA is explaining the musculoskeletal system to a patient. Which of the following correctly describes the role of tendons?

A. Connect bone to bone and stabilize joints
B. Connect muscle to bone
C. Provide cushioning between vertebrae
D. Surround and protect major joints with synovial fluid

20. Which of the following best describes the function of erythrocytes (red blood cells)?

A. Defend the body against infection and foreign pathogens
B. Initiate the clotting cascade when vascular injury occurs
C. Transport oxygen from the lungs to body tissues
D. Produce antibodies in response to antigens

21. A provider documents that a patient has "cholelithiasis." The CCMA understands this refers to:

A. Inflammation of the gallbladder
B. Gallstones
C. Inflammation of the bile duct
D. Absence of the gallbladder

22. Which of the following correctly identifies the location of the thyroid gland?

A. In the posterior abdominal cavity, behind the stomach
B. At the base of the brain, below the hypothalamus
C. In the anterior neck, wrapped around the trachea
D. In the mediastinum, superior to the heart

23. A CCMA is reviewing the integumentary system. Which of the following correctly describes the primary function of melanin?

A. Regulate body temperature through perspiration
B. Provide sensation of touch, pressure, and pain

C. Absorb UV radiation and protect underlying tissues
D. Produce vitamin D in response to sunlight exposure

24. A CCMA is reviewing the digestive system. In which of the following locations does the majority of nutrient absorption occur?

A. Stomach
B. Large intestine
C. Esophagus
D. Small intestine

25. Which of the following correctly pairs a hormone with its source gland?

A. Insulin — adrenal cortex
B. Cortisol — pancreas
C. Estrogen — thyroid gland
D. Glucagon — pancreas

ANSWER KEY

Check your score and understand the rationale behind each answer.

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1. A provider documents "pt c/o SOB x 3 days." The CCMA correctly interprets this as:

ANSWER: B) Patient complains of shortness of breath for 3 days

Rationale: *"c/o" means "complains of" and "SOB" is the abbreviation for shortness of breath. "x 3 days" indicates duration.*

2. Which of the following suffixes correctly means "surgical removal of"?

ANSWER: B) -ectomy

Rationale: *The suffix "-ectomy" means surgical removal (e.g., appendectomy = removal of appendix). "-itis" = inflammation; "-ostomy" = surgical opening; "-plasty" = surgical repair or reshaping.*

3. A medication label reads "take 1 tablet SL PRN for chest pain." The CCMA correctly instructs the patient to:

ANSWER: C) Place the tablet under the tongue when chest pain occurs.

Rationale: *"SL" stands for sublingual — meaning under the tongue. Sublingual administration allows rapid absorption through the mucous membranes, bypassing first-pass metabolism.*

4. A provider orders "1 mL IM into the deltoid." The CCMA correctly understands that "IM" refers to which route of administration?

ANSWER: C) Into the muscle tissue

Rationale: *"IM" stands for intramuscular — administered by injection directly into muscle tissue. The deltoid, vastus lateralis, and ventrogluteal sites are common IM injection locations within MA scope of practice. Intradermal (ID) is into the dermis; intravenous (IV) is into a vein; subcutaneous (SQ/SC) is under the skin.*

5. A CCMA is reviewing a patient's chart that notes "Dx: HTN, DM2." Which of the following correctly interprets these abbreviations?

ANSWER: B) Diagnosis: hypertension and type 2 diabetes mellitus

Rationale: *"Dx" = diagnosis; "HTN" = hypertension (high blood pressure); "DM2" = type 2 diabetes mellitus. These are among the most common chronic condition abbreviations in clinical documentation.*

6. A CCMA is preparing to administer a medication that is classified as a loop diuretic. Which of the following is the expected effect of this drug class?

ANSWER: C) Increased urine output

Rationale: *Loop diuretics (such as furosemide) act on the loop of Henle in the kidney to inhibit sodium and water reabsorption, resulting in increased urine output. They are commonly used to treat fluid overload, CHF, and hypertension.*

7. Which of the following correctly describes the difference between a drug's generic name and its brand name?

ANSWER: B) The generic name identifies the active ingredient; the brand name is the manufacturer's trademarked name.

Rationale: *The generic name (e.g., ibuprofen) identifies the active chemical ingredient and is nonproprietary. The brand name (e.g., Advil) is the trademarked name given by the manufacturer. Generic drugs contain the same active ingredient but may differ in inactive components.*

8. A CCMA is reviewing a patient's medication list and sees "atenolol 25 mg PO Daily." The CCMA recognizes atenolol as which drug class?

ANSWER: B) Beta-blocker

Rationale: *Atenolol is a cardioselective beta-1 blocker used to treat hypertension, angina, and arrhythmias. Drug class recognition is important because beta-blockers are held in certain clinical situations (e.g., symptomatic bradycardia, severe asthma).*

9. A provider prescribes "amoxicillin 500 mg PO TID x 10 days." The CCMA calculates that the patient will take how many total doses over the course of treatment?

ANSWER: C) 30

Rationale: *TID = three times per day. 3 doses/day × 10 days = 30 total doses.*

10. Which of the following word roots correctly means "kidney"?

ANSWER: C) Nephr

Rationale: *"Nephr" refers to the kidney (e.g., nephritis = inflammation of the kidney). "Hepat" = liver; "cardi" = heart; "oste" = bone.*

11. A CCMA is reviewing a medication order for a patient and sees the notation "NKA." Which of the following does this mean?

ANSWER: A) No known allergies

Rationale: *"NKA" stands for "no known allergies." It is a standard notation in the allergy section of a medical record. "NKDA" (no known drug allergies) is a related but more specific abbreviation.*

12. A CCMA is educating a student about the five "rights" of medication administration. Which of the following is NOT one of the five rights?

ANSWER: C) Right prescriber

Rationale: *The traditional five rights of medication administration are: right patient, right drug, right dose, right route, and right time. "Right prescriber" is not one of the five rights, though verifying the order's legitimacy is part of safe practice.*

13. A patient's chart lists a drug allergy to sulfonamides. The CCMA should be aware that this allergy may be relevant when which of the following medications is prescribed?

ANSWER: B) Trimethoprim-sulfamethoxazole (TMP-SMX)

Rationale: *TMP-SMX (brand name Bactrim) contains a sulfonamide component (sulfamethoxazole). Patients with sulfonamide allergies may react to this combination antibiotic. Azithromycin, amoxicillin-clavulanate, and ciprofloxacin are from different drug classes and do not contain sulfonamides.*

14. Which of the following correctly describes the term "half-life" as it relates to pharmacology?

ANSWER: B) The time required for the body to eliminate half of an administered drug dose

Rationale: *Half-life (t½) is the time required for the plasma concentration of a drug to decrease by 50%. It is used to determine dosing intervals and how long a drug remains active in the body. Drugs with longer half-lives are typically dosed less frequently.*

15. A CCMA is reviewing a new patient intake form. The patient lists "penicillin — hives" under allergies. Which of the following describes this type of reaction?

ANSWER: C) Allergic (hypersensitivity) reaction

Rationale: *An allergic (hypersensitivity) reaction is an immune-mediated response to a drug. Hives (urticaria) are a classic sign of a Type I hypersensitivity reaction. This is distinct from a side effect (predictable, dose-related) or toxic reaction (from excessive amounts). DOMAIN 2: ANATOMY AND PHYSIOLOGY (Questions 16–25)*

16. Which of the following cranial nerves is responsible for the sense of smell?

ANSWER: B) Cranial nerve I (olfactory)

Rationale: *Cranial nerve I (olfactory) transmits the sense of smell from the nasal mucosa to the brain. Cranial nerve II (optic) carries vision; CN VII (facial) controls facial muscles and taste on the anterior tongue; CN V (trigeminal) handles facial sensation and chewing.*

17. A CCMA is reviewing anatomy with a medical student. Which of the following organs is located in the right upper quadrant (RUQ) of the abdomen?

ANSWER: C) Liver

Rationale: *The liver is located primarily in the right upper quadrant. The spleen is in the left upper quadrant (LUQ); the sigmoid colon is in the left lower quadrant (LLQ); the descending colon runs through the left side of the abdomen.*

18. The process by which oxygen and carbon dioxide are exchanged between the alveoli and the blood is called:

ANSWER: C) External respiration

Rationale: *External respiration refers to the gas exchange between the alveoli and the pulmonary capillaries. Ventilation is the mechanical movement of air into and out of the lungs. Cellular respiration is the metabolic use of oxygen within cells. Perfusion refers to blood flow through tissues.*

19. A CCMA is explaining the musculoskeletal system to a patient. Which of the following correctly describes the role of tendons?

ANSWER: B) Connect muscle to bone

Rationale: *Tendons connect muscle to bone and transmit the force of muscle contraction to produce movement. Ligaments connect bone to bone. Intervertebral discs cushion the vertebrae. Bursae are fluid-filled sacs that cushion joints; the synovial membrane produces synovial fluid.*

20. Which of the following best describes the function of erythrocytes (red blood cells)?

ANSWER: C) Transport oxygen from the lungs to body tissues

Rationale: *Erythrocytes contain hemoglobin, which binds oxygen in the lungs and releases it to tissues. Leukocytes (white blood cells) defend against infection; thrombocytes (platelets) initiate clotting; plasma B cells (a type of lymphocyte) produce antibodies.*

21. A provider documents that a patient has "cholelithiasis." The CCMA understands this refers to:

ANSWER: B) Gallstones

Rationale: *"Cholelith/o" = gallstone; "-iasis" = condition or presence of. Cholelithiasis means the presence of gallstones. Cholecystitis = inflammation of the gallbladder; cholangitis = inflammation of the bile duct.*

22. Which of the following correctly identifies the location of the thyroid gland?

ANSWER: C) In the anterior neck, wrapped around the trachea

Rationale: *The thyroid gland is a butterfly-shaped endocrine gland located in the anterior neck, wrapping around the anterior trachea just below the larynx. It produces thyroid hormones (T3, T4) and calcitonin.*

23. A CCMA is reviewing the integumentary system. Which of the following correctly describes the primary function of melanin?

ANSWER: C) Absorb UV radiation and protect underlying tissues

Rationale: *Melanin is the pigment produced by melanocytes in the epidermis that absorbs UV radiation, protecting underlying cells from DNA damage. Vitamin D synthesis occurs in the skin but is driven by UV exposure acting on cholesterol, not melanin itself.*

24. A CCMA is reviewing the digestive system. In which of the following locations does the majority of nutrient absorption occur?

ANSWER: D) Small intestine

Rationale: *The small intestine — specifically the jejunum and ileum — is the primary site of nutrient absorption. Villi and microvilli dramatically increase the surface area for absorption. The stomach mechanically and chemically breaks down food; the large intestine absorbs water and electrolytes.*

25. Which of the following correctly pairs a hormone with its source gland?

ANSWER: D) Glucagon — pancreas

Rationale: *Glucagon is produced by the alpha cells of the pancreatic islets of Langerhans. It raises blood glucose by stimulating glycogen breakdown. Insulin is produced by the beta cells of the pancreas; cortisol is from the adrenal cortex; estrogen is from the ovaries.*

Study Reference Guide Domains 1 & 2

Foundational Knowledge & Basic Science • Anatomy & Physiology

Domain 1: Foundational Knowledge & Basic Science

Medical Terminology

Prefix / Suffix / Root	Meaning	Example
brady- / tachy-	Slow / Fast	bradycardia / tachypnea
hyper- / hypo-	Above / Below normal	hypertension / hypoglycemia
sub- / intra-	Under / Within	sublingual / intramuscular
poly- / dys-	Many / Difficult or painful	polyuria / dysuria
-itis / -ectomy	Inflammation / Surgical removal	nephritis / appendectomy
-ostomy / -otomy	Surgical opening / Surgical incision	colostomy / tracheotomy
-plasty / -scopy	Surgical repair / Visual exam	rhinoplasty / colonoscopy
-emia / -iasis	Blood condition / Condition of, abnormal of	anemia / cholelithiasis
nephr | hepat	Kidney | Liver	nephritis / hepatitis
cardi | gastr	Heart | Stomach	cardiology / gastritis
derm/ | neur	Skin | Nerve	dermatitis / neuropathy
oste | hem	Bone | Blood	osteoporosis / hemorrhage

Common Clinical Abbreviations

Abbreviation	Meaning
c/o / Hx / Dx / Tx / Rx	Complains of / History / Diagnosis / Treatment / Prescription
NKA / NKDA	No known allergies / No known drug allergies
STAT / PRN	Immediately / As needed
PO / SL	By mouth (oral) / Sublingual — under the tongue
IM / IV / SQ / ID	Intramuscular / Intravenous / Subcutaneous / Intradermal
BID / TID / QID	Twice / Three / Four times daily
AC / PC	Before meals / After meals
HTN / DM2	Hypertension / Type 2 diabetes mellitus
SOB / CP / N/V	Shortness of breath / Chest pain / Nausea & vomiting

Pharmacology Fundamentals

Drug class	Mechanism / Use	Key examples
Beta-blockers	Lower HR and BP — treat HTN, angina, arrhythmia	atenolol, metoprolol
ACE inhibitors	Lower BP; kidney-protective in diabetes	lisinopril, enalapril
Loop diuretics	Block Na^+ reabsorption in loop of Henle → ↑ urine output	furosemide (Lasix)
Statins	Inhibit HMG-CoA reductase → lower LDL cholesterol	atorvastatin, simvastatin
SSRIs	Increase serotonin availability → depression, anxiety	sertraline, fluoxetine
NSAIDs	Anti-inflammatory, analgesic, antipyretic; inhibit COX	ibuprofen, naproxen
Anticoagulants	Reduce clotting — monitor INR and for bleeding	warfarin, heparin
Sulfonamides	Antibiotic class — flag for sulfonamide-allergic patients	TMP-SMX (Bactrim)

★ *Five rights of medication administration: right patient, right drug, right dose, right route, right time.*

★ *Half-life (t½) = time for plasma drug concentration to drop 50%. Longer t½ = less frequent dosing. Most drugs are metabolized by the liver and excreted by the kidneys.*

★ *Adverse reactions: side effect (predictable, dose-related) vs. allergic/hypersensitivity (immune-mediated — hives, anaphylaxis) vs. toxic reaction (excess drug levels).*

Domain 2: Anatomy & Physiology

Directional Terms & Body Planes

Term	Meaning
Superior / Inferior	Above / Below (the head is superior to the neck)
Anterior / Posterior	Front / Back (sternum = anterior; spine = posterior)
Medial / Lateral	Toward midline / Away from midline
Proximal / Distal	Closer to / Farther from point of attachment
Prone / Supine	Lying face-down / Lying face-up
Sagittal plane	Divides body into left and right halves
Frontal (coronal) plane	Divides body into front and back
Transverse plane	Divides body into top and bottom

Abdominal Quadrants

Quadrant	Key organs
RUQ — Right upper	Liver, gallbladder, right kidney, head of pancreas
LUQ — Left upper	Stomach, spleen, left kidney, tail of pancreas
RLQ — Right lower	Appendix, cecum, right ureter, right ovary (F)
LLQ — Left lower	Sigmoid colon, left ureter, left ovary (F)

Body Systems Overview

System	Key structures & functions
Integumentary	Layers: epidermis → dermis → hypodermis. Melanin absorbs UV. Accessory: hair, nails, sweat + sebaceous glands
Musculoskeletal	Tendons = muscle to bone. Ligaments = bone to bone. Muscle types: skeletal (voluntary), smooth (organs), cardiac
Cardiovascular	Right heart → lungs (oxygenate) → left heart → body. Arteries carry blood away; veins return it. Systole = contraction, diastole = relaxation
Respiratory	Pathway: nasal cavity → pharynx → larynx → trachea → bronchi → alveoli. External respiration = O_2/CO_2 exchange at alveoli
Digestive	Small intestine = primary absorption site (jejunum/ileum). Stomach = mechanical + chemical breakdown. Large intestine = water absorption
Urinary	Kidneys filter blood, regulate fluid and electrolytes, produce urine. Pathway: kidneys → ureters → bladder → urethra
Nervous	CNS = brain + spinal cord. Sympathetic = fight-or-flight; parasympathetic = rest-and-digest. 12 cranial nerve pairs
Endocrine	Ductless glands secrete hormones into bloodstream. Regulated largely by negative feedback (e.g., pituitary → thyroid)
Lymphatic / Immune	Lymph nodes filter fluid; house immune cells. B cells → antibody production. T cells → cell-mediated response

Key Hormones

Hormone & source gland	Function
Insulin — pancreas (beta cells)	Lowers blood glucose; promotes glucose uptake
Glucagon — pancreas (alpha cells)	Raises blood glucose via glycogen breakdown
Cortisol — adrenal cortex	Stress response; anti-inflammatory; raises blood glucose
Epinephrine — adrenal medulla	Fight-or-flight: ↑ HR, ↑ BP, bronchodilation
T3 / T4 — thyroid gland	Regulate metabolism; require iodine for synthesis
PTH — parathyroid gland	Raises blood calcium; opposes calcitonin
ADH — posterior pituitary	Promotes water retention in kidneys

Hormone & source gland	Function
Estrogen / Testosterone — gonads	Sex characteristics; reproductive cycle regulation

★ *Exocrine glands secrete through ducts (sweat, saliva, pancreatic enzymes). Endocrine glands release hormones directly into the bloodstream.*

★ *Negative feedback: most hormone systems self-regulate — high hormone levels signal the pituitary to reduce stimulating hormone output.*