



COLLEGE BSN ENTRANCE EXAM

Large Trilingual Study Guide



English • Tagalog/Filipino • Bisaya/Cebuano



COMPLETE REVIEW

English, Math, Science,
Logic & Nursing Basics



PRACTICE TESTS

Drills, Quizzes &
Mock Exams



EXPLANATIONS

Detailed Answers &
Study Tips



FOCUS. PREPARE. SUCCEED.

Your future in nursing
starts here.



*With knowledge,
determination, and
faith — you can
make a difference. ♥*

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Thank you for being a light to help others.



College BSN Entrance Exam

Master Reviewer & Trilingual Study Guide

English • Tagalog / Filipino • Bisaya / Cebuano

Important Study Disclaimer. This book is an educational study guide only, designed to help you prepare for BSN entrance examinations. It is **not** a substitute for professional clinical training, official school materials, or real-world nursing practice.

Medication calculations, lab values, vital signs, and clinical scenarios are for exam-preparation purposes only. Always follow your school's guidelines, current clinical protocols, and the orders of licensed healthcare providers in real situations.

Found an error? Please report it to info@gracetreepress.com so we can improve the guide for the next student.

Table of Contents

Everything consolidated into one book — every lesson, verified practice question, and nursing diagram. Page numbers refer to the printed counter at the bottom of each page.

Part 0 • Welcome & How to Use This Guide	4
Part 1 • English, Vocabulary & Reading	8
Part 2 • Mathematics & Basic Nursing Math	12
Part 3 • Medical Terminology	18
Part 4 • Science & Body Systems	23
Part 5 • Nursing & Health Basics	30
Part 6 • Logic & Reasoning	41
Part 7 • Practice Tests & Question Bank	
Part 8 • Cheat Sheets & Nursing Diagrams	

Part 0 • Welcome & How to Use This Guide

The goal is not to turn pages. The goal is to stop repeating the same error.

Welcome

This is your complete College BSN Entrance Exam reviewer in one book. It brings together English, Mathematics, Medical Terminology, Science, Nursing & Health Basics, Logic & Reasoning, full practice tests, and high-yield cheat sheets — all consolidated for efficient study.

Work the Book in Layers

- **Learn** the lesson.
- **Drill** with the short practice questions.
- **Log** every mistake in your Mistake Log.
- **Re-test** only the items you missed, two days later.

The Core Idea

The goal is not to turn pages. The goal is to stop repeating the same errors. A focused student who reviews mistakes will outscore a student who simply re-reads.

Language Support Note

This edition is primarily in English. Tagalog/Filipino and Bisaya/Cebuano translations and explanations are in development and will be added in future updates. Where available, key terms are shown in all three languages to support bilingual learners.

The 30-Day Focused Study Plan

This plan integrates lessons, practice questions, cheat-sheet review, and Mistake-Log work. Adjust it based on your diagnostic-test results.

Days	Focus Area & Daily Tasks
Days 1–5	English grammar, vocabulary, reading comprehension + 20 MCQs/day. Review Subject–Verb Agreement, Pronouns, Main Idea & Inference.
Days 6–10	Fractions, decimals, percentages, ratios, metric conversions + 30 dosage/IV problems/day. Memorize the metric ladder.
Days 11–15	Science: cells, heart, lungs, brain, kidneys, digestion, immunity + 20 science questions/day.
Days 16–20	Medical terminology, vital signs, infection control, ADPIE, communication + Infection-Control and Medication-Safety tables.
Days 21–25	Mixed drills, prioritization vignettes, Mistake-Log review, ethics quick-hits.
Days 26–30	Full mock exams (Foundation + Exam-Ready), corrections, final cheat-sheet review, targeted remediation on weak domains.

Daily Study Method — Pomodoro + Active Recall

- Study in focused blocks: **25 minutes study + 5 minutes rest**, repeated 3–4 times.
- For every wrong answer, log: question #, topic, your answer vs. correct answer, *why* you missed it, and the rule you will use next time.
- Use English first; refer to Tagalog/Bisaya notes when available for deeper understanding.
- End each session with a 5-minute review of that day's Mistake-Log entries.

Multiple-Choice Strategy

The strongest test-takers do not guess faster — they think more clearly. Read the stem twice and circle keywords: *priority, first, best, most likely, initial, immediate, NOT, EXCEPT, contraindicated*.

Core Rules

- Predict the answer before reading the choices when possible.
- Eliminate extreme options (*always, never, only*) unless the stem clearly supports them.
- For nursing items, safe answers usually involve assessment first, infection prevention, patient safety, privacy, reporting, documentation, or the ABCs.
- For logic items, choose only what *must* be true from the given information. Ignore outside knowledge.
- Pace yourself at about **1.2 minutes per question**; flag hard items and return later.
- For calculations, convert units first, show every step, check that the answer is reasonable, and never round until the end.

Priority Thinking Framework — ABCs + Safety

Priority questions ask what matters *first*. Use this order.

- **Airway** — Can air enter and leave?
- **Breathing** — Is gas exchange happening? (SpO₂, respiratory rate, effort)
- **Circulation** — Is blood moving? (pulse, blood pressure, perfusion)
- **Safety** — Prevent harm (falls, infection, medication errors, acute changes)
- **Comfort** — Pain or anxiety (addressed after the above are stable)

Default Rule

When patients are involved, handle the acute or unstable problem first, then follow Airway → Breathing → Circulation → Safety → Comfort.

The Mistake Log Method

A Mistake Log is faster than re-reading the entire book. It shows exactly what to repair. For every missed item, write:

- Question number and topic
- The correct answer
- Your wrong answer
- The reason missed: content gap, careless reading, math step, unit conversion, keyword missed, or vocabulary
- The rule or clue you will use next time

Worked Example

Wrong: 0.5 g = 50 mg. Correct: 0.5 g = 500 mg, because 1 g = 1000 mg. Reason missed: unit-conversion error.
Fix: write the unit ladder before solving.

Quick Reference — Transmission-Based Precautions

Standard Precautions apply to **all** patients. Hand hygiene is the single most important action to prevent the spread of infection.

Type	Examples	PPE Required	Key Nursing Action
Airborne	TB, measles, chickenpox, COVID (certain cases)	N95 + gown + gloves + eye protection	Negative-pressure room; patient wears a surgical mask when leaving
Droplet	Influenza, pertussis, mumps, rubella, meningitis	Surgical mask + gown + gloves + eye protection	Private room preferred; keep > 1 m distance
Contact	MRSA, VRE, C. difficile, scabies	Gown + gloves	Dedicated equipment; soap & water for C. diff (not alcohol)

Quick Reference — Adult Vital Signs & Red Flags

Vital Sign	Normal Adult Range	Report / Act If
Temperature	36.5–37.5 °C	> 38.0 °C or < 36.0 °C
Pulse (heart rate)	60–100 bpm	< 50 or > 120 bpm with symptoms
Respiratory rate	12–20 breaths/min	< 10 or > 24 with distress
Blood pressure	< 120/80 mmHg	> 140/90 or < 90/60 with symptoms
SpO ₂ (room air)	≥ 94–96%	< 94% or a sudden drop

A Note of Thanks

A special shout-out to Isaiah Sendy (www.isaiahsendy.com). Thank you for your support and for helping make this guide better for future nursing students.

Part 1 • English, Vocabulary & Reading

Read carefully, choose precisely — language is the first test of clinical judgment.

Why English Matters on a BSN Entrance Exam

Nursing is built on precise communication. A misread order, a vague chart note, or a misunderstood instruction can change patient care. Entrance exams test whether you can read carefully, choose the exact word, and reason from a passage without inventing facts. This part covers grammar, vocabulary, and reading — the three areas that show up most.

How to Study This Part

Learn the rule, do the drills, then read one short passage aloud in your head every day. Most English errors on the exam are careless-reading errors, not knowledge gaps. Slow down on the question stem.

1.1 English Grammar: Subject-Verb Agreement

A verb must match the *real* subject of the sentence, not the nearest noun. Entrance exams love to hide the subject inside a phrase to trick you.

Rules

- Ignore phrases that begin with *of*, *with*, *as well as*, *together with*, *along with* — they are not the subject.
- Singular subjects take singular verbs: **is**, **has**, **does**, **was**.
- Plural subjects take plural verbs: **are**, **have**, **do**, **were**.
- *Each*, *every*, *everyone*, *anybody*, *someone*, *neither*, *either* are usually **singular**.
- Two subjects joined by **and** are usually plural; joined by **or** / **nor**, the verb agrees with the nearer subject.

Examples

- The **list** of supplies **is** ready. (Subject = list, not supplies.)
- The **nurses** in the ward **are** ready. (Subject = nurses.)
- **Each** applicant **has** an ID. (Each is singular.)
- Neither the doctor nor the **nurses** **were** late. (Verb agrees with the nearer subject, nurses.)

1.2 English Grammar: Pronouns & Point of View

A pronoun must match the noun it replaces (its antecedent) and must be in the correct case.

Rules

- Use **I**, **he**, **she**, **we**, **they** as subjects (they do the action).
- Use **me**, **him**, **her**, **us**, **them** as objects (they receive the action).
- After a preposition such as *between*, *for*, *with*, *to*, use **object** pronouns.

- Avoid unclear pronouns when two nouns could be the reference — name the noun instead.
- Keep point of view consistent; do not jump from *you* to *one* to *they* in the same sentence.

Examples

- Between **you and me** is correct (object pronouns after *between*).
- Maria forgot **her** bag.
- The students brought **their** notebooks.
- Unclear: *When the nurse spoke to the patient, she was calm.* Better: name who was calm.

1.3 Commonly Confused & Misused Words

These pairs appear constantly on entrance exams. Memorize the difference.

Word	Meaning & Quick Trick
their / there / they're	their = possession; there = place; they're = they are
your / you're	your = possession; you're = you are
its / it's	its = possession; it's = it is
affect / effect	affect = verb (to influence); effect = noun (a result)
accept / except	accept = to receive; except = to leave out
than / then	than = comparison; then = time/sequence
principal / principle	principal = main / head person; principle = a rule
to / too / two	to = direction; too = also/excessive; two = number 2
lose / loose	lose = to misplace; loose = not tight
fewer / less	fewer = countable items; less = uncountable amount

1.4 Sentence Structure & Punctuation

Clear sentences earn points. Exams test fragments, run-ons, and comma use.

Rules

- A complete sentence needs a subject and a verb and expresses a full thought.
- A **fragment** is missing a subject or verb — fix it by completing the thought.
- A **run-on** joins two sentences with no punctuation — fix with a period, semicolon, or comma + conjunction (*and, but, so, or*).

- Use a comma after an introductory phrase, between items in a list, and before a coordinating conjunction joining two full sentences.
- Use an apostrophe for possession (*the nurse's badge*) and contractions (*can't*), never for simple plurals.

Examples

- Fragment: *Because the patient was tired.* → Complete: *The patient rested because she was tired.*
- Run-on: *The shift ended she went home.* → *The shift ended, so she went home.*
- List comma: *Bring gloves, a mask, and a gown.*

1.5 Reading: Main Idea & Inference

The **main idea** is the umbrella of the passage. An **inference** is a conclusion the passage supports without stating directly.

Finding the Main Idea

- Ask: *What is the whole paragraph mostly about?*
- Do not pick an answer that is true but covers only one detail (too small).
- Do not pick an answer that is bigger than the passage (too broad).
- The main idea is often in the first or last sentence — but verify with the whole passage.

Making an Inference

- Use **only** what the passage supports — no outside facts.
- Reject choices that add brand-new information.
- Pick the most reasonable conclusion, not the most dramatic one.

Memory Line

Main idea = umbrella. Details = raindrops. Infer, do not invent.

1.6 Vocabulary in Context

You do not need to know every word. Many vocabulary questions can be solved from surrounding clues.

Clue Types

- **Contrast clues:** *but, however, although, unlike, instead* signal the opposite meaning is nearby.
- **Example clues:** *such as, including, for example* point to a definition by illustration.
- **Definition clues:** *means, called, refers to, that is* state the meaning directly.
- **Tone clues:** the overall feeling (positive, negative, urgent, calm) narrows the choice.

Examples

- *The wound was superficial, not deep.* The clue *not deep* tells you *superficial* = shallow.

- The instructions were ambiguous, so students gave different answers. Ambiguous = unclear.

1.7 High-Yield Vocabulary for Health Reading

These words appear in nursing-themed passages. Learn the meaning and a synonym.

Word	Meaning	Synonym
acute	sudden, severe, short-term	sharp, sudden
chronic	long-lasting, ongoing	persistent
benign	not harmful, not cancerous	harmless
adverse	harmful, unfavorable	negative
adhere	to stick to / follow closely	comply
contraindicated	not advisable; should be avoided	inadvisable
prudent	careful, wise	sensible
deteriorate	to get worse	decline
alleviate	to relieve or lessen	ease
imminent	about to happen	impending

1.8 Verbal Analogies

Some exams include word analogies. Build a clear sentence that links the first pair, then apply it to the second.

Method

- State the relationship in a short sentence: *Scalpel is to surgeon as ___ is to ___.*
- Match the **type** of relationship: part-to-whole, tool-to-user, cause-and-effect, synonym, antonym, degree.
- Eliminate pairs whose relationship does not match the sentence you built.

Example

- *Thermometer : temperature :: scale : weight.* (Each instrument measures the value that follows it.)

Section Test Tips

Read every answer choice in your head — the grammatically wrong one usually sounds unnatural. Always circle NOT / EXCEPT / BEST / MAIN IDEA in the stem before choosing. When two answers seem right, the more specific, passage-supported one usually wins.

Part 2 • Mathematics & Basic Nursing Math

Accuracy is compassion in action — every milligram is a promise to your patient.

Welcome to Nursing Math

Every milliliter, every milligram, every drop you calculate can mean the difference between healing and harm. In nursing, math is not abstract — it is one of the most direct ways you show care. This section is built for clear reading: work every example by hand before checking the answer key, and revisit weak areas after 48 hours.

Memory Helper

Do not just memorize formulas — understand the logic behind them. When you know *why* a formula works, you can solve any variation the exam (or a real patient) puts in front of you.

2.1 Why Nursing Math Matters — Safety First

Medication errors are among the most common preventable causes of patient harm, and many begin with a simple miscalculation, a skipped unit conversion, or a rushed high-alert drug. Entrance exams test both your calculation skill and your judgment: will you slow down when it matters most?

The Rights of Medication Administration (Math Focus)

- **Right patient** — confirm identity before any calculation.
- **Right drug** — match the order to the label exactly.
- **Right dose** — the core calculation skill of this section.
- **Right route** — oral, IM, and IV change the concentration and volume math.
- **Right time** — affects rate calculations such as mL/hr and gtt/min.
- **Right documentation** — record what you gave and how you calculated it.

High-Alert Medications Require a Double-Check

Insulin • Heparin / Warfarin • Opioids (morphine, fentanyl) • Aminoglycosides • Potassium chloride IV • Magnesium sulfate • Chemotherapy. For these, always have a second licensed nurse independently verify your calculation and pump settings before administration.

2.2 Metric System Mastery

Hospitals use the metric system almost exclusively. You must move confidently between kilo, base, milli, and micro units. The ladder makes this visual and nearly foolproof.

The Metric Ladder — move the decimal 3 places per step



DOWN the ladder (larger → smaller unit): move the decimal **RIGHT**. **UP** the ladder: move the decimal **LEFT**.

King Henry Mnemonic

"King Henry Died By Drinking Chocolate Milk" — Kilo, Hecto, Deca, **Base**, Deci, Centi, Milli.

Golden Rule

Always convert to match the unit on the medication label *before* you calculate. Example: 0.5 g = 500 mg (move the decimal three places right).

2.3 Dosage Calculation — The Core Nursing Skill

This is the single most tested skill on BSN entrance exams. Master the **formula method** first; it is the most intuitive.

$$\text{Volume} = (D \div H) \times V$$

D = Desired dose (what is ordered) · **H** = Have on hand (strength on the label) · **V** = Volume of that strength

Worked Example 1 — Oral Liquid

Order: Amoxicillin 250 mg PO. **Available:** 125 mg per 5 mL suspension.

- D = 250 mg | H = 125 mg | V = 5 mL
- Volume = $(250 \div 125) \times 5 = 2 \times 5 = 10 \text{ mL}$

Worked Example 2 — Tablet with Unit Conversion

Order: 0.5 g. **Available:** 250 mg tablets.

- Step 1 (critical): convert 0.5 g = 500 mg.
- Tablets = $(500 \div 250) \times 1 = 2 \text{ tablets}$

Never Skip Unit Conversion — the #1 Error

Mixing grams and milligrams (or liters and milliliters) is the most common calculation mistake on exams and in practice. Convert the order to match the label unit *before* you calculate.

2.4 IV Flow Rate Calculations

Both infusion-pump (mL/hr) and gravity-drip (gtt/min) calculations appear on entrance exams.

Calculation	Formula	Notes
Infusion pump	$\text{mL/hr} = \text{Total Volume (mL)} \div \text{Hours}$	Pumps are safest and most common today
Gravity drip	$\text{gtt/min} = (\text{mL/hr} \times \text{Drop Factor}) \div 60$	Drop factor printed on the tubing
Drop factors	10, 15, 20 gtt/mL (macro) • 60 gtt/mL (microdrip)	Microdrip used for precise/pediatric rates

Worked IV Example

Order: 1000 mL 0.9% NS over 8 hours via gravity tubing, drop factor 20 gtt/mL.

- $\text{mL/hr} = 1000 \div 8 = 125 \text{ mL/hr}$
- $\text{gtt/min} = (125 \times 20) \div 60 = 2500 \div 60 \approx \mathbf{42 \text{ gtt/min}}$ (round to the nearest whole drop)

2.5 Temperature, Weight & Length Conversions

Type	Formula	Example
$^{\circ}\text{F} \leftrightarrow ^{\circ}\text{C}$	$^{\circ}\text{C} = (^{\circ}\text{F} - 32) \times 5/9$ • $^{\circ}\text{F} = (^{\circ}\text{C} \times 9/5) + 32$	$37^{\circ}\text{C} = 98.6^{\circ}\text{F}$
$\text{lb} \leftrightarrow \text{kg}$	$\text{kg} = \text{lb} \div 2.2$ • $\text{lb} = \text{kg} \times 2.2$	$154 \text{ lb} = 70 \text{ kg}$
Metric	$1 \text{ g} = 1000 \text{ mg}$ • $1 \text{ L} = 1000 \text{ mL}$	$0.5 \text{ g} = 500 \text{ mg}$

2.6 Practice Question Bank

Work every question on paper. Check the Answer Key only after finishing the whole set, and log every mistake with the rule you missed.

Dosage & Conversion Practice

- **Q-2.1** Order: 0.25 g. Available: 125 mg tablets. How many tablets?
- **Q-2.2** Order: 750 mg. Available: 250 mg tablets. How many tablets?
- **Q-2.3** Order: 500 mg. Available: 1 g vial reconstituted to 10 mL. How many mL?
- **Q-2.4** IV pump: 1500 mL over 12 hours. What is the mL/hr rate?
- **Q-2.5** Gravity IV: 1000 mL over 8 hours, drop factor 20 gtt/mL. Calculate gtt/min.
- **Q-2.6** Convert 2.5 L to mL.
- **Q-2.7** A vial contains 2 mg/mL. Order is 0.5 mg. What volume should be drawn up?
- **Q-2.8** Order: 6 units regular insulin IV. Available: 100 units/mL. How many mL?
- **Q-2.9** 1000 mL over 8 hours via gravity tubing, 15 gtt/mL. Calculate gtt/min.
- **Q-2.10** Order: 0.5 g. Convert to mg.

Mixed Practice

- **Q-2.11** Order: 250 mg. Available: 500 mg scored tablets. How many tablets?
- **Q-2.12** Order: 300 mg. Available: 150 mg per tablet. How many tablets?
- **Q-2.13** IV: 1000 mL over 6 hours. What is the mL/hr rate?
- **Q-2.14** Patient weighs 176 lb. Convert to kilograms.
- **Q-2.15** Convert 38 °C to °F.
- **Q-2.16** Order: 1.5 g. Available: 500 mg capsules. How many capsules?
- **Q-2.17** Microdrip tubing (60 gtt/mL) running at 50 mL/hr. Calculate gtt/min.
- **Q-2.18** Convert 0.75 L to mL.
- **Q-2.19** Order: 4 mg. Available: 2 mg/mL. What volume?
- **Q-2.20** Order: 750 mg. Available: 250 mg tablets. How many tablets?

Detailed Answer Key

Read the full explanation even when you got the answer right — this builds deeper understanding.

#	Answer	Solution
Q-2.1	2 tablets	$0.25 \text{ g} = 250 \text{ mg}; (250 \div 125) \times 1 = 2$
Q-2.2	3 tablets	$(750 \div 250) \times 1 = 3$
Q-2.3	5 mL	$1 \text{ g} = 1000 \text{ mg}; (500 \div 1000) \times 10 = 5$
Q-2.4	125 mL/hr	$1500 \div 12 = 125$
Q-2.5	42 gtt/min	$\text{mL/hr} = 125; (125 \times 20) \div 60 = 41.67 \rightarrow 42$
Q-2.6	2500 mL	$2.5 \text{ L} \rightarrow \text{move decimal 3 right}$
Q-2.7	0.25 mL	$(0.5 \div 2) \times 1 = 0.25$; use a 1 mL syringe
Q-2.8	0.06 mL	$(6 \div 100) \times 1 = 0.06$; high-alert — double-check
Q-2.9	$\approx 31 \text{ gtt/min}$	$(125 \times 15) \div 60 = 31.25 \rightarrow 31$
Q-2.10	500 mg	$0.5 \text{ g} \rightarrow \text{move decimal 3 right}$
Q-2.11	0.5 tablet	$(250 \div 500) \times 1$; confirm scoring
Q-2.12	2 tablets	$(300 \div 150) \times 1 = 2$
Q-2.13	$\approx 167 \text{ mL/hr}$	$1000 \div 6 = 166.7$
Q-2.14	80 kg	$176 \div 2.2 = 80$
Q-2.15	100.4 °F	$(38 \times 9/5) + 32$
Q-2.16	3 capsules	$1.5 \text{ g} = 1500 \text{ mg}; (1500 \div 500) = 3$
Q-2.17	50 gtt/min	microdrip: $\text{gtt/min} = \text{mL/hr}$
Q-2.18	750 mL	$0.75 \text{ L} \rightarrow \text{move decimal 3 right}$
Q-2.19	2 mL	$(4 \div 2) \times 1 = 2$
Q-2.20	3 tablets	$(750 \div 250) \times 1 = 3$

2.7 Common Pitfalls & Pro Tips

Dangerous Abbreviations — Write Them Out

U/u → write "unit" • IU → "International Unit" • QD → "daily" • QOD → "every other day" • trailing zero (1.0 mg) → write 1 mg • naked decimal (.5 mg) → write 0.5 mg • MS / MSO₄ → "morphine sulfate".

Bedside Safety Habits

1) Convert units on paper before drawing up any medication or programming a pump. 2) Independently calculate every high-alert medication, then have a colleague verify. 3) When in doubt about a rate or dose, stop, re-calculate, and verify with policy or pharmacy. 4) Document unusual calculations so the next nurse can verify your work.

2.8 How This Connects to the Rest of the Guide

- **Part 5 (Nursing Basics):** infection control, vital signs, and prioritization connect to safe medication timing and post-dose assessment.
- **Part 7 (Practice Tests):** every mock exam contains 8–12 math items; drill your weakest conversion type.
- **Part 8 (Cheat Sheets):** print the Formulas & Conversions one-pager and the IV Quick Card for clinicals.

Part 3 • Medical Terminology

The language that saves lives — decode any term by breaking it into parts.

Welcome to Medical Terminology

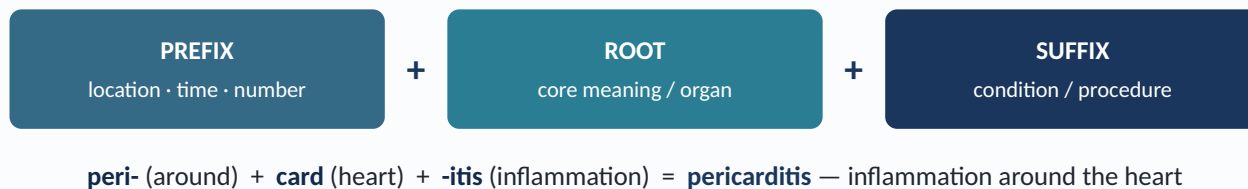
Every nurse, doctor, and allied-health professional shares one language: medical terminology. It is precise, efficient, and universal. Mastering it is not just for exams — it is for patient safety, clear documentation, and professional credibility.

Why This Matters in Real Nursing

A nurse who knows that *nephrectomy* means kidney removal can better prepare a patient and anticipate post-op care. Confusing *STAT* with *PRN*, or missing *NPO*, can cause serious errors. Terminology is safety.

3.1 How Medical Terms Are Built

Most medical terms have three parts: a **prefix** (beginning), a **root** (core meaning), and a **suffix** (ending). Breaking words apart is the single most powerful skill in this part.



Basic Rules

- A **prefix** usually shows location, time, number, or status (*hyper-* = excessive, *brady-* = slow).
- A **root** gives the main meaning, often a body part (*cardi/o* = heart, *gastr/o* = stomach).
- A **suffix** usually shows a condition, disease, or procedure (*-itis* = inflammation, *-ectomy* = removal).
- A **combining vowel** (usually *o*) links parts to make the word easier to say.

3.2 High-Yield Prefixes

Memorize the meaning and one example for each. These appear constantly.

Prefix	Meaning	Example
a- / an-	without / absent	apnea (no breathing)
brady-	slow	bradycardia
tachy-	fast	tachycardia
hyper-	above / excessive	hypertension
hypo-	below / deficient	hypoglycemia
intra-	within / inside	intravenous
inter-	between	intercostal
peri-	around	pericardium
sub-	under / below	subcutaneous
supra-	above	suprarenal
pre-	before	preoperative
post-	after	postoperative
anti-	against	antibiotic
poly-	many / much	polydipsia
mono-	one / single	monocyte
bi-	two	bilateral
hemi-	half	hemiplegia
macro-	large	macrocyte
micro-	small	microscope
neo-	new	neonatal
dys-	difficult / painful	dyspnea

3.3 High-Yield Suffixes

Suffixes often tell you the condition or procedure.

Suffix	Meaning	Example
-itis	inflammation	arthritis = joint inflammation
-ectomy	surgical removal	appendectomy = removal of the appendix
-osis / -iasis	condition / disease	osteoporosis = porous-bone condition
-algia	pain	neuralgia = nerve pain
-pathy	disease	cardiopathy = heart disease
-emia	blood condition	anemia = deficiency of red blood
-megaly	enlargement	cardiomegaly = enlarged heart
-uria	urine condition	hematuria = blood in the urine
-ologist	specialist	cardiologist = heart specialist
-otomy	cutting into	tracheotomy = cutting into the trachea
-plasty	surgical repair	angioplasty = repair of a vessel
-scopy	visual examination	endoscopy = looking inside

3.4 High-Yield Roots by Body System

Cross-reference these with Part 4 (Science & Body Systems).

Cardiovascular

- cardi/o = heart • angi/o = vessel • arteri/o = artery • ven/o = vein • hem/o, hemat/o = blood

Respiratory

- pulmon/o, pneum/o = lung • rhin/o = nose • laryng/o = larynx • trache/o = trachea • bronch/o = bronchus

Gastrointestinal

- gastr/o = stomach • hepat/o = liver • col/o = colon • enter/o = intestine • nephro/o = kidney

Musculoskeletal & Nervous

- oste/o = bone • arthr/o = joint • my/o = muscle • neur/o = nerve • encephal/o = brain • cephal/o = head

Memory Trick

Group roots by system and make a silly story: *"The cardiologist had a gastronomic meal before checking the hepatomegaly on the nephrology patient."* (heart + stomach + liver + kidney)

3.5 Abbreviations & Safety Warnings

Abbreviations save time but can cause deadly errors. Cross-reference the dangerous-abbreviation list in Part 2.

Dangerous Abbreviations — Write Them Out

U/u → unit · IU → International Unit · QD → daily · QOD → every other day · trailing zero (1.0) → write 1 · naked decimal (.5) → write 0.5 · MS / MSO₄ → morphine sulfate.

Common Safe, High-Yield Abbreviations

- **Orders/Routes:** STAT = immediately · PRN = as needed · NPO = nothing by mouth · PO = by mouth · IV = intravenous · IM = intramuscular · SC/SQ = subcutaneous
- **Vitals:** BP = blood pressure · HR = heart rate · RR = respiratory rate · SpO₂ = oxygen saturation · T = temperature
- **Charting:** Dx = diagnosis · Tx = treatment · Hx = history · Sx = symptoms · Rx = prescription

3.6 Practice Question Bank

- **Q-3.1** What does *bradycardia* mean?
- **Q-3.2** Break down *hyperglycemia* into prefix + root + suffix and give the meaning.
- **Q-3.3** A patient has *nephritis*. Which organ is inflamed?
- **Q-3.4** What procedure is an *appendectomy*?
- **Q-3.5** The suffix *-algia* refers to what?
- **Q-3.6** Build a term meaning "inflammation of the stomach."
- **Q-3.7** What term means "slow breathing"?
- **Q-3.8** What does *osteoporosis* literally mean?
- **Q-3.9** Which term means "disease of the heart muscle"?
- **Q-3.10** What does *tachypnea* mean?

Answers & Explanations

#	Answer	Why
Q-3.1	Slow heart rate	brady- (slow) + cardi/o (heart)
Q-3.2	Excess sugar in the blood	hyper- (excessive) + glyc/o (sugar) + -emia (blood)
Q-3.3	Kidney	nephr/o (kidney) + -itis (inflammation)
Q-3.4	Removal of the appendix	append- + -ectomy (removal)
Q-3.5	Pain	-algia = pain
Q-3.6	Gastritis	gastr/o + -itis
Q-3.7	Bradypnea	brady- (slow) + -pnea (breathing)
Q-3.8	Porous-bone condition	oste/o (bone) + -porosis
Q-3.9	Cardiomyopathy	cardi/o + my/o (muscle) + -pathy (disease)
Q-3.10	Fast breathing	tachy- (fast) + -pnea (breathing)

Next Steps

Use these roots while studying Part 4 anatomy, decode terms inside the Part 7 mock exams, and print the terminology quick cards from Part 8.

Part 4 • Science & Body Systems

Understand the fundamentals clearly — structure, function, and how systems keep you balanced.

Introduction

This part covers the major body systems at the level expected on BSN entrance exams. The focus is structure, basic function, and how systems work together to maintain homeostasis. You do not need deep clinical detail — you need the fundamentals, clearly.

High-yield systems: **Cardiovascular, Respiratory, Renal, Nervous, Digestive, Immune**, and the concept of **Homeostasis**.

1. Homeostasis & Body Systems Overview

Homeostasis is the body's ability to keep a stable internal environment despite outside changes. All systems work together to hold conditions (temperature, pH, fluid balance, blood pressure) within narrow normal ranges.

Key Examples

- Temperature regulation (sweating when hot, shivering when cold)
- Blood-glucose control (insulin lowers, glucagon raises)
- Blood-pressure regulation (heart rate, vessel constriction/dilation)
- Fluid and electrolyte balance (kidneys, hormones)

2. Cells — The Basic Unit of Life

All body systems are made of cells. Knowing basic cell parts helps explain how organs work.

Cell Part	Main Function
Cell membrane	Controls what enters and leaves the cell; protects it.
Nucleus	Control center; contains DNA and directs cell activity.
Mitochondria	Powerhouse; produces energy (ATP) by cellular respiration.
Ribosomes	Make proteins; free in cytoplasm or on rough ER.
Endoplasmic reticulum	Rough ER: protein synthesis. Smooth ER: lipids and detox.
Golgi apparatus	Packages, modifies, and ships proteins and lipids.

EXAM TIP: Questions often ask which organelle produces energy (mitochondria) or which controls the cell (nucleus).

3. Cardiovascular System

The cardiovascular system transports oxygen, nutrients, hormones, and waste throughout the body.

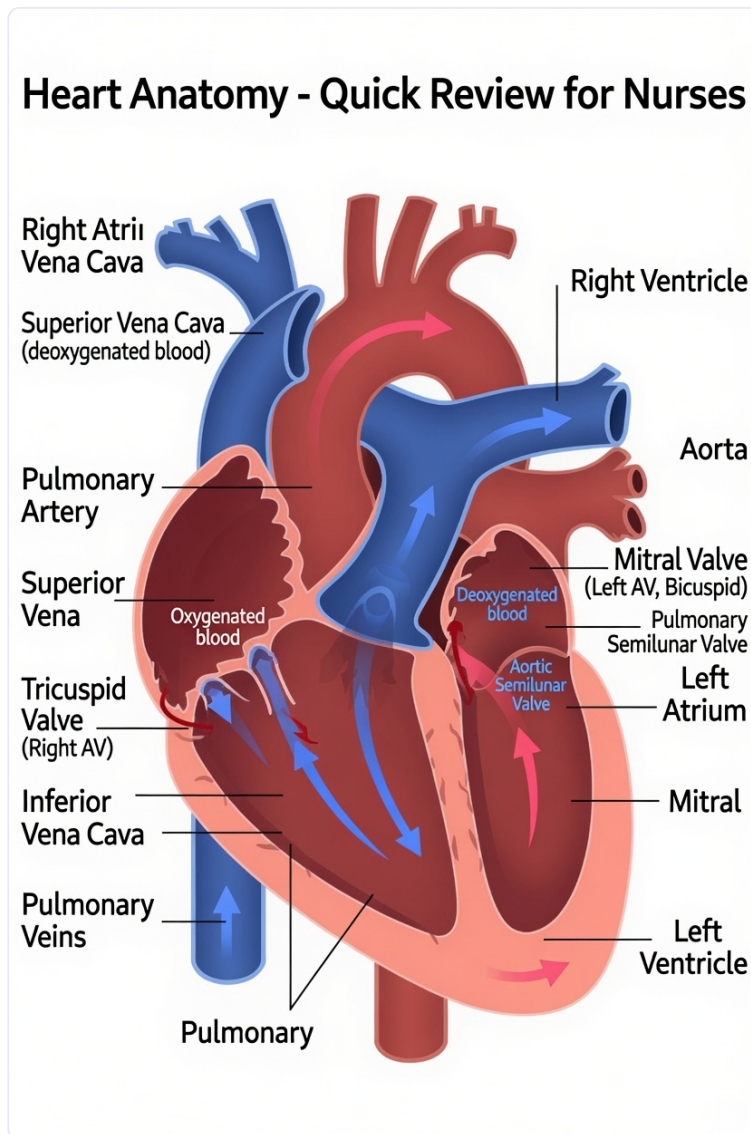


Figure 4.1 — Heart anatomy and the direction of blood flow.

Heart Structure

- Four chambers: right atrium → right ventricle → left atrium → left ventricle.
- The **right** side pumps deoxygenated blood to the lungs (pulmonary circulation).
- The **left** side pumps oxygenated blood to the body (systemic circulation).
- Valves prevent backflow: tricuspid, pulmonary, mitral (bicuspid), aortic.
- Coronary arteries supply the heart muscle itself.

Blood Flow Through the Heart

Body → vena cava → right atrium → tricuspid valve → right ventricle → pulmonary valve → pulmonary artery → lungs → pulmonary veins → left atrium → mitral valve → left ventricle → aortic valve → aorta → body.

High-Yield Terms

- **Systole:** contraction (ventricles pumping). **Diastole:** relaxation (ventricles filling).
- **Cardiac output:** blood pumped per minute. **Blood pressure:** force of blood against artery walls.

4. Respiratory System

The respiratory system brings in oxygen and removes carbon dioxide. Gas exchange happens in the alveoli.

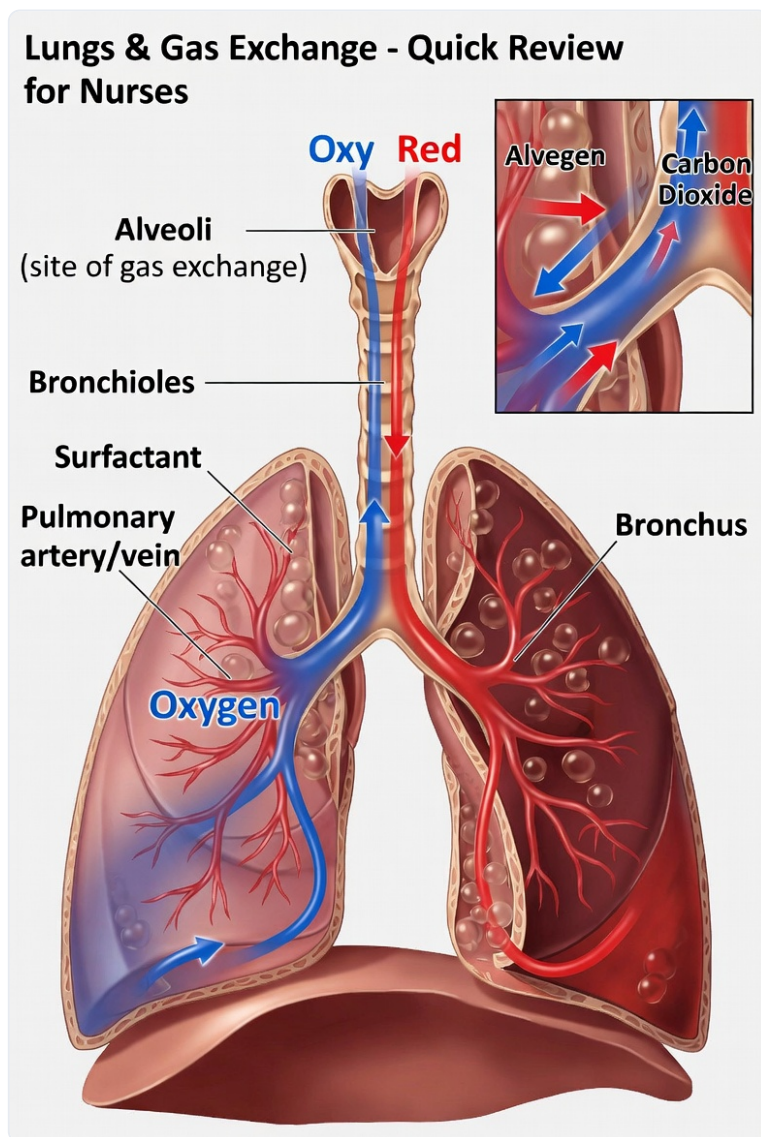


Figure 4.2 — Lungs and gas exchange. Alveoli are the site of oxygen/CO₂ exchange.

Key Structures

- Pathway: nose/mouth → pharynx → larynx → trachea → bronchi → bronchioles → alveoli.
- **Alveoli:** tiny air sacs where oxygen and carbon dioxide exchange with blood.
- **Diaphragm:** main breathing muscle; contracts to inhale, relaxes to exhale.
- **Pleura:** membranes covering the lungs and lining the chest cavity.

EXAM TIP: Alveoli are the site of gas exchange. Damage to alveoli (e.g., emphysema) reduces oxygen uptake.

5. Renal System

The kidneys filter blood, remove waste, balance fluid and electrolytes, and help control blood pressure.

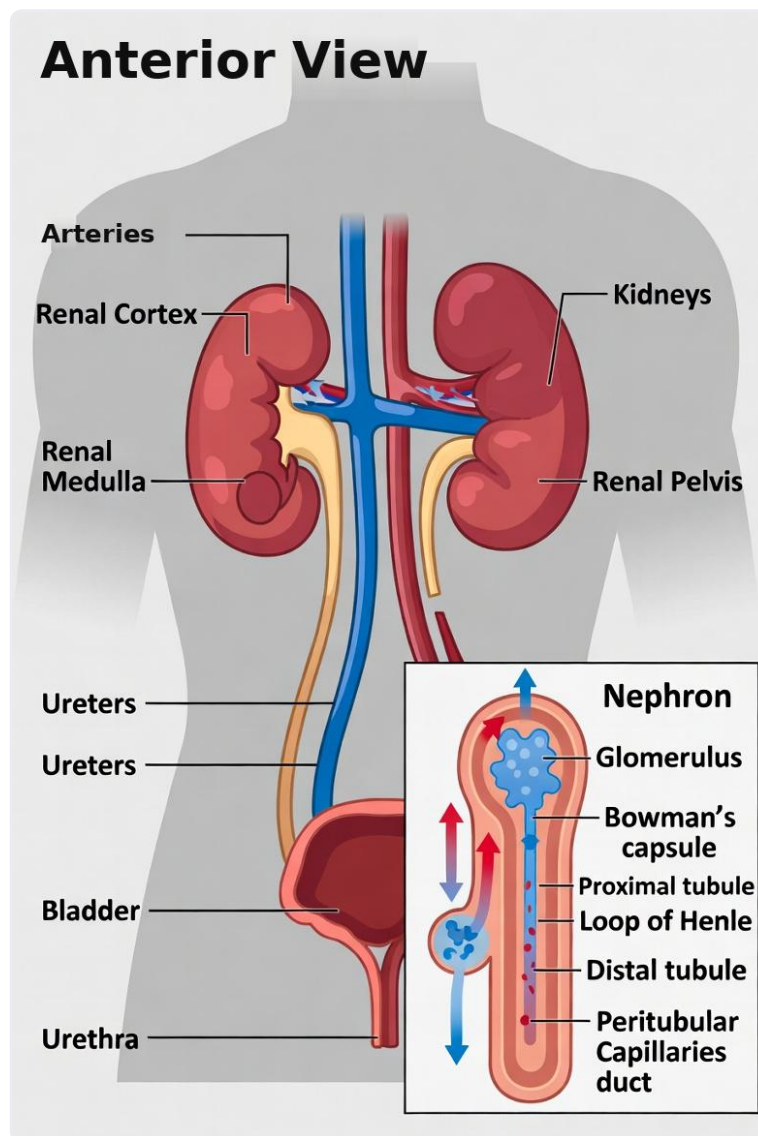


Figure 4.3 — Kidneys and the nephron, the functional filtering unit.

Key Functions

- Filter blood and produce urine.
- Regulate water, sodium, potassium, and pH balance.
- Produce erythropoietin (stimulates red-blood-cell production) and activate vitamin D.
- Help regulate blood pressure (renin-angiotensin system).

Basic Structure

Each kidney has about one million **nephrons**. Blood enters via the renal artery, is filtered in the **glomerulus**, and waste becomes urine that travels through the ureters to the bladder.

EXAM TIP: Rising creatinine and BUN levels indicate reduced kidney function.

6. Nervous System

The nervous system controls and coordinates body activities through the Central Nervous System (CNS) and Peripheral Nervous System (PNS).

Central Nervous System

- **Brain:** control center — cerebrum (thinking, movement), cerebellum (balance, coordination), brainstem (basic life functions).
- **Spinal cord:** carries messages between brain and body; controls reflexes.

Neuron Basics

Neurons have dendrites (receive signals), a cell body, and an axon (sends signals). Impulses travel electrically and cross synapses using neurotransmitters.

EXAM TIP: The brain needs constant oxygen and glucose. Even short interruptions can cause damage.

7. Digestive System

The digestive system breaks food into nutrients for energy, growth, and repair.

Main Pathway

Mouth → esophagus → stomach → small intestine (duodenum, jejunum, ileum) → large intestine (colon) → rectum → anus.

Key Organs

- **Stomach:** mixes food with acid and enzymes.
- **Small intestine:** main site of digestion and nutrient absorption.
- **Liver:** produces bile, processes nutrients, detoxifies.
- **Pancreas:** produces digestive enzymes and insulin.

- **Large intestine:** absorbs water and forms stool.

8. Immune System

The immune system defends the body against pathogens and abnormal cells.



Figure 4.4 — The Chain of Infection. Break any link to stop the spread.

Key Components

- **White blood cells (leukocytes):** main defenders (neutrophils, lymphocytes, monocytes).
- **Antibodies:** proteins that recognize and neutralize specific pathogens.
- **Lymphatic system:** lymph nodes, spleen, tonsils — filters lymph and houses immune cells.
- **Inflammation:** first response to injury or infection (redness, swelling, heat, pain).

EXAM TIP: Vaccines work by training the immune system to recognize pathogens without causing disease.

Quick Summary

System	Main Function	Key Structures
Cardiovascular	Transport blood, oxygen, nutrients	Heart, arteries, veins, capillaries
Respiratory	Gas exchange (O ₂ in, CO ₂ out)	Lungs, alveoli, diaphragm
Renal	Filter blood, produce urine, balance fluids	Kidneys, nephrons
Nervous	Control & coordination	Brain, spinal cord, nerves
Digestive	Break down & absorb nutrients	Stomach, intestines, liver, pancreas
Immune	Defend against pathogens	White blood cells, lymph nodes, antibodies

Part 5 • Nursing & Health Basics

Safe answers favor assessment, prevention, privacy, and reporting — think like a nurse.

1. The Nursing Process (ADPIE)

The nursing process is a systematic, patient-centered framework delivered as a continuous five-step cycle.

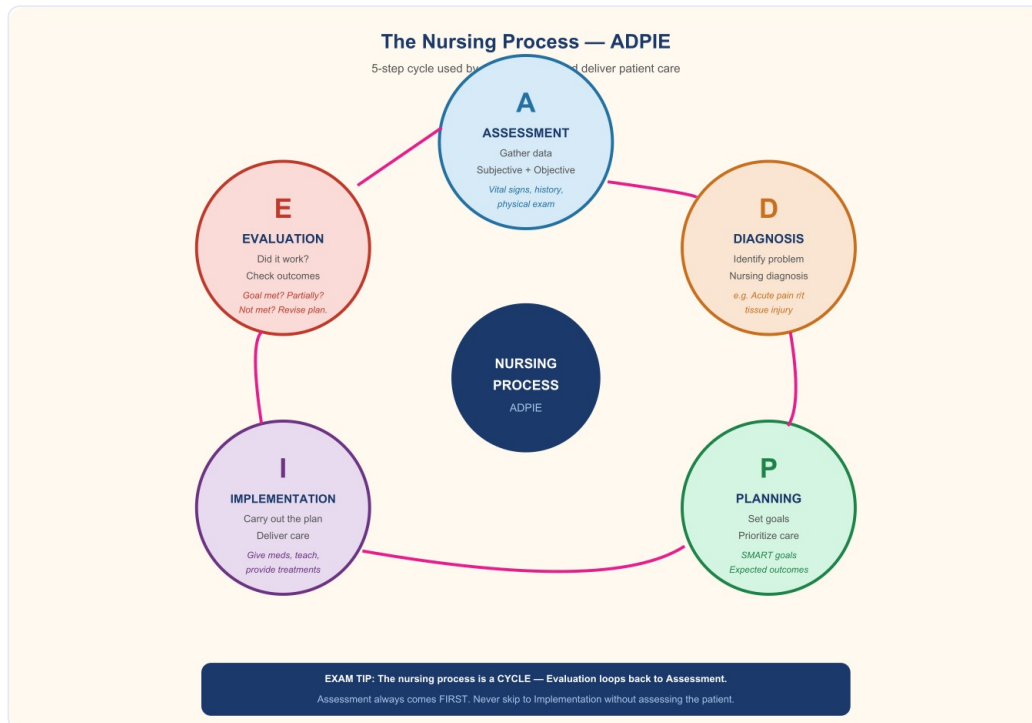


Figure 5.1 — The Nursing Process (ADPIE). Evaluation loops back to Assessment.

The Five Steps

- **Assessment:** collect subjective (what the patient says) and objective (measurable) data.
- **Diagnosis:** analyze the data to identify actual or potential problems.
- **Planning:** set measurable goals and choose interventions.
- **Implementation:** carry out the plan (delegating appropriately).
- **Evaluation:** judge whether goals were met; revise and repeat.

EXAM TIP: Questions often ask what the nurse does FIRST. Assessment almost always comes before action — unless there is an immediate life threat (then use the ABCs).

2. Priority Thinking — ABCs + Safety

When multiple patients or problems exist, use a clear priority framework.

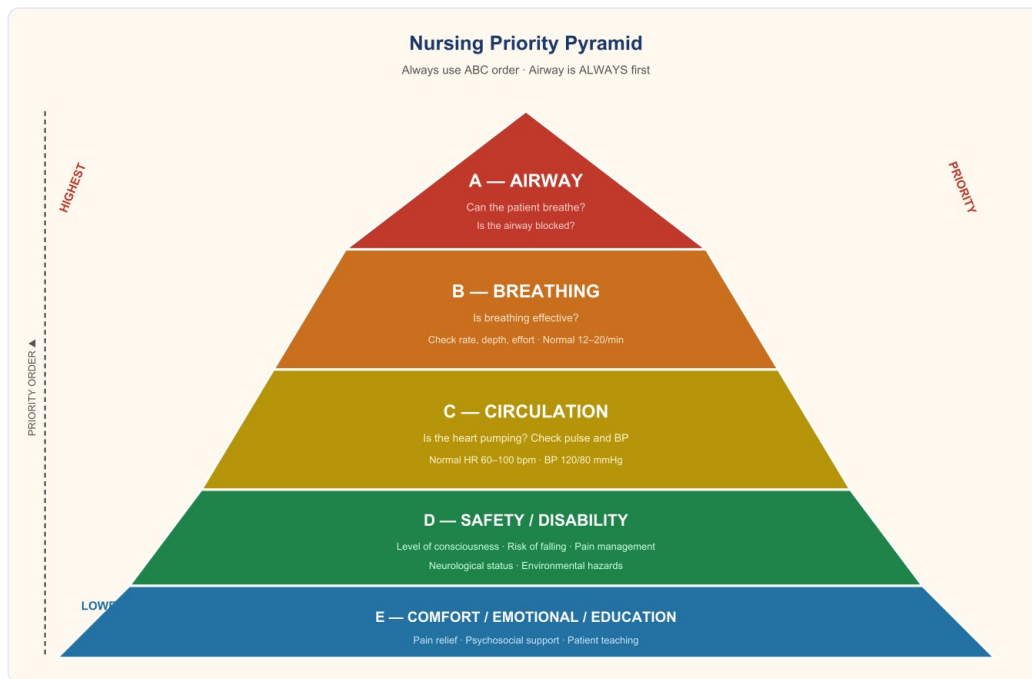


Figure 5.2 — ABCs + Safety priority pyramid.

Priority Order

- **Airway:** can air enter and leave? (obstruction, positioning, secretions)
- **Breathing:** is gas exchange happening? (rate, SpO₂, effort)
- **Circulation:** is blood moving? (pulse, BP, perfusion, bleeding)
- **Safety:** prevent harm (falls, infection, medication errors)
- **Comfort:** pain, anxiety, emotional needs (after higher priorities are stable)

Key Rule

Acute/unstable before stable. New problems before chronic/routine. Life-threatening before non-life-threatening.

3. Infection Control & Standard Precautions

Standard Precautions apply to all patients regardless of diagnosis. Hand hygiene is the single most important action to prevent transmission.

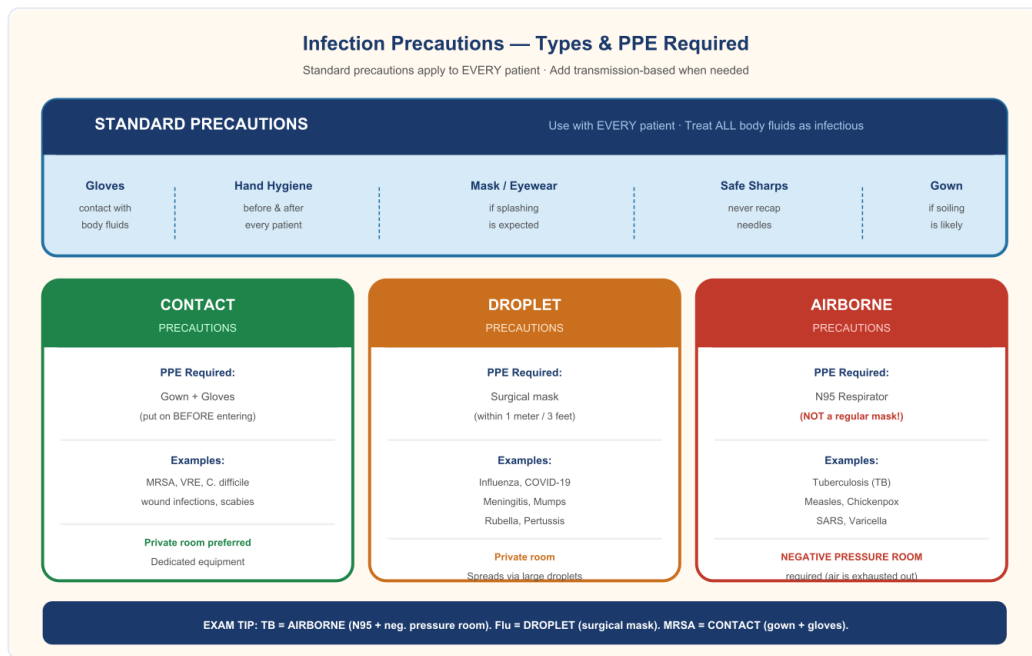


Figure 5.3 — Transmission-based precautions and required PPE.

Transmission-Based Precautions

Type	Examples	PPE Required	Key Actions
Airborne	TB, measles, chickenpox, COVID (certain cases)	N95 + gown + gloves + eye protection	Negative-pressure room; patient masks when leaving
Droplet	Influenza, pertussis, mumps, rubella, meningitis	Surgical mask + gown + gloves + eye protection	Private room preferred; keep > 1 m distance
Contact	MRSA, VRE, C. difficile, scabies	Gown + gloves	Dedicated equipment; soap & water for C. diff (not alcohol)

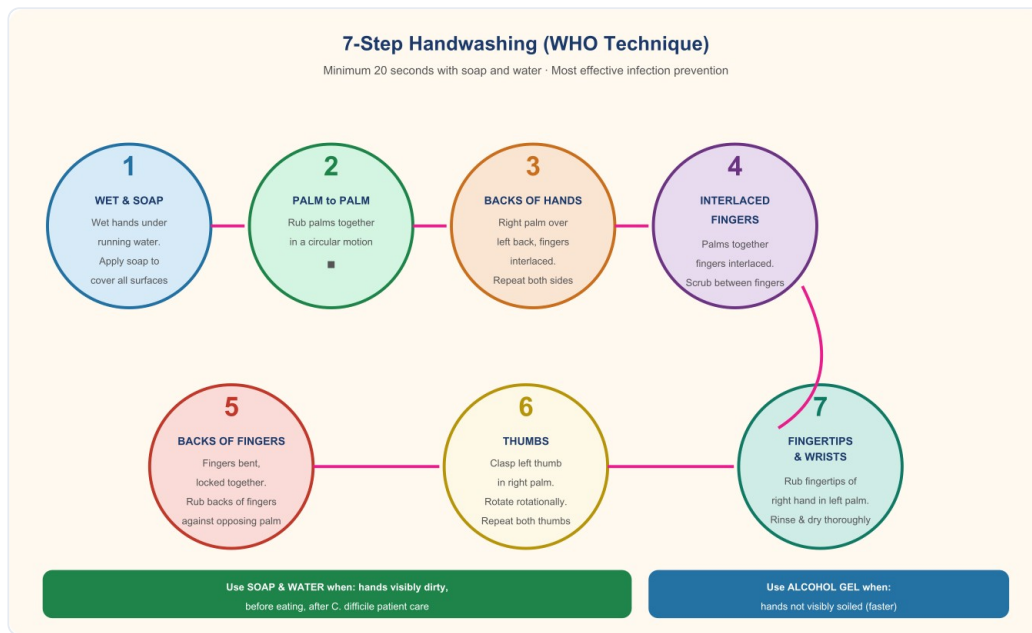


Figure 5.4 — WHO hand-hygiene technique.

WHO 5 Moments for Hand Hygiene

- Before patient contact
- Before an aseptic procedure
- After body-fluid exposure risk
- After patient contact
- After touching patient surroundings

4. Vital Signs — Normal Ranges & Red Flags

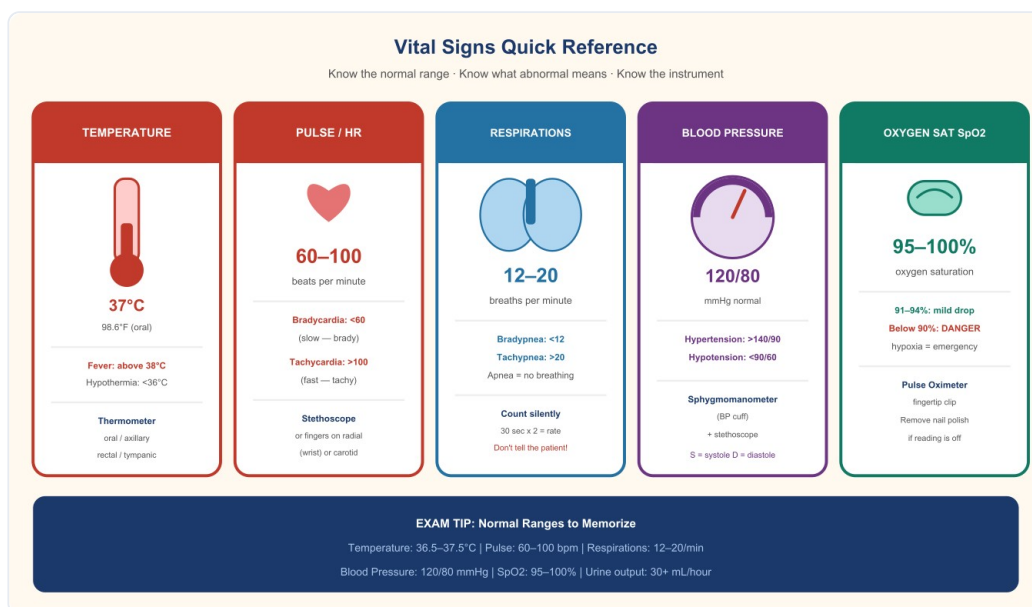


Figure 5.5 — Adult vital signs quick reference.

Vital Sign	Normal Adult Range	Report / Urgent Action If
Temperature	36.5–37.5 °C (97.7–99.5 °F)	> 38.0 °C (fever) or < 36.0 °C
Pulse (HR)	60–100 bpm	< 50 or > 120 bpm + symptoms; new irregular rhythm
Respiratory rate	12–20 breaths/min	< 10 or > 24 + distress
Blood pressure	< 120/80 mmHg	> 140/90 or < 90/60 + symptoms
SpO ₂ (room air)	≥ 94–96%	< 94% or sudden drop
Pain	0–10 scale (patient-reported)	sudden severe pain or pattern change

Immediate-Attention Red Flags

New confusion • chest pain with radiation • sudden shortness of breath • active bleeding • signs of stroke (FAST) • hypoglycemia symptoms • SpO₂ < 90%.

5. Medication Safety

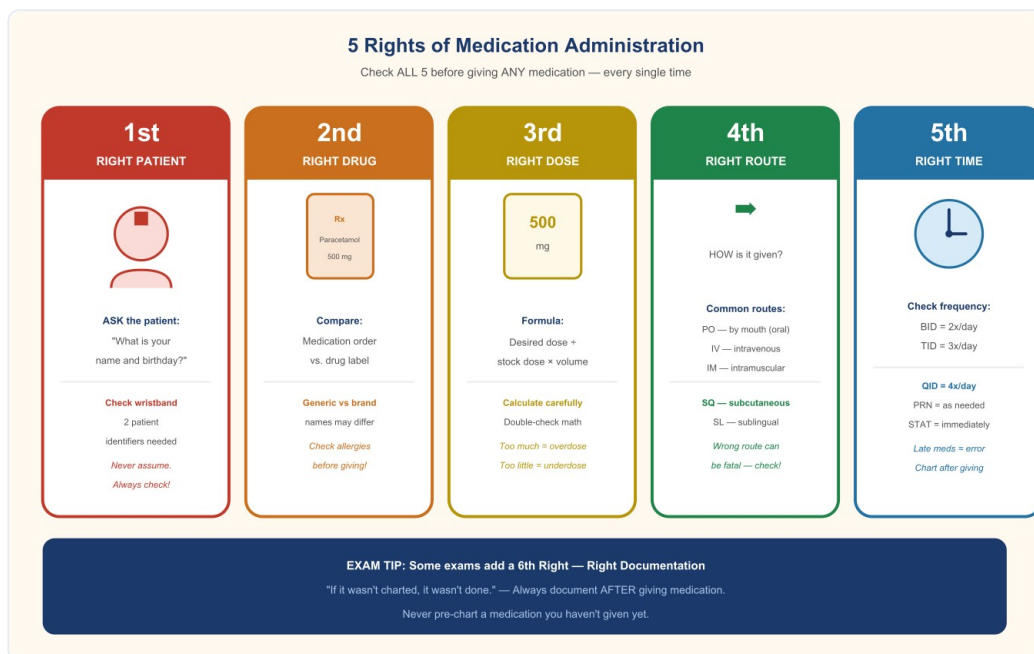


Figure 5.6 — The Rights of Medication Administration.

The 10 Rights

Right patient • right drug • right dose • right route • right time • right documentation • right reason • right response • right to refuse • right education.

High-Alert Medications (Double-Check Required)

Insulin • heparin & warfarin • opioids (morphine, fentanyl) • aminoglycosides (gentamicin) • chemotherapy • magnesium sulfate • potassium chloride (IV).

6. Communication & Documentation

SBAR — Structured Communication Tool
Used when reporting patient condition to a doctor or team member

S SITUATION What is happening RIGHT NOW? State clearly: • Your name and unit • Patient name and room number • Why you are calling <i>"I am calling about Mr. Santos, Room 302. He is having difficulty breathing."</i>	B BACKGROUND Relevant patient history Provide context: • Admitting diagnosis • Relevant medical history • Current medications <i>"He was admitted 2 days ago for pneumonia. He is on amoxicillin."</i>
A ASSESSMENT Your clinical impression Share your findings: • Current vital signs • What you think is happening • Level of distress <i>"His SpO2 dropped to 88%. RR is 28/min. He seems to be deteriorating."</i>	R RECOMMENDATION What do you need? Suggest action: • What you'd like the doctor to do • Any order you want confirmed • Urgency of response <i>"Can you please come see him now? Should I start supplemental oxygen?"</i>

EXAM TIP: SBAR = Situation, Background, Assessment, Recommendation. Used in all professional nurse-to-doctor communication.

Figure 5.7 — SBAR structured communication tool.

SBAR organizes a handoff or report: **S**ituation, **B**ackground, **A**ssessment, **R**ecommendation. It keeps communication clear, complete, and safe.

Therapeutic vs Non-Therapeutic Communication	
Entrance exams test your ability to choose the BEST nurse response	
THERAPEUTIC (CORRECT)	NON-THERAPEUTIC (AVOID)
Open-ended questions "Tell me more about how you're feeling." "What concerns you most today?"	Closed/yes-no questions "Are you in pain?" (limits response) "Do you feel better today?"
Active Listening "I hear that you're worried about surgery." "Go on, I'm listening..."	False Reassurance "Everything will be fine, don't worry!" "I'm sure the doctor knows best."
Empathy & Validation "That must be very difficult for you." "It's understandable to feel scared."	Giving Advice "You should just stop worrying about it." "If I were you, I would..."
Clarifying / Reflecting "What I hear you saying is..." "Can you tell me more about that pain?"	Changing Subject "Let's not talk about that now." "How about we focus on your meds?"
EXAM TIP: The best nurse response is always: Open-ended · Empathetic · Focused on the patient's feelings · Never dismissing concerns If the answer sounds kind but shuts down the patient → choose a different option.	

Figure 5.8 — Therapeutic vs. non-therapeutic communication.

Therapeutic communication uses open-ended questions, active listening, and silence. Avoid false reassurance, giving advice, or minimizing feelings.

Nursing Documentation Principles	
Patient records are LEGAL documents · Accuracy is a professional and legal requirement	
"If it wasn't documented, it wasn't done." This is the most important rule in nursing documentation — and a frequent exam answer.	
1 ACCURATE & OBJECTIVE Write what you OBSERVED, not your opinion. <i>"Patient stated pain 7/10" NOT "patient seems painful"</i>	5 CORRECT ERRORS PROPERLY Draw ONE line through error. Write "Error" and sign. <i>NEVER use correction fluid (White-out) on medical records</i>
2 DATE & TIME EVERY ENTRY Always include date, time, and your signature. <i>Use 24-hour (military) time: 14:30 not 2:30 PM</i>	6 USE APPROVED ABBREVIATIONS Only use facility-approved abbreviations. <i>Unclear abbreviations cause medication errors</i>
3 LEGIBLE & CLEAR Poor handwriting is a patient safety risk. <i>If unreadable → wrong medication → harm to patient</i>	7 CONFIDENTIALITY Records are PRIVATE. Only accessible to care team. <i>Sharing patient info without consent = violation</i>
4 NO PRE-CHARTING Document AFTER you give care, not before. <i>Pre-charting medication you haven't given = falsification</i>	8 DOCUMENT PATIENT RESPONSE Note how patient responded to care given. <i>"Patient reported pain relief within 30 minutes"</i>

Figure 5.9 — Nursing documentation principles.

Charting Rule

"If it wasn't documented, it wasn't done." Chart factually, promptly, and objectively — never pre-chart care you have not given.

7. Safety: Falls & Fire

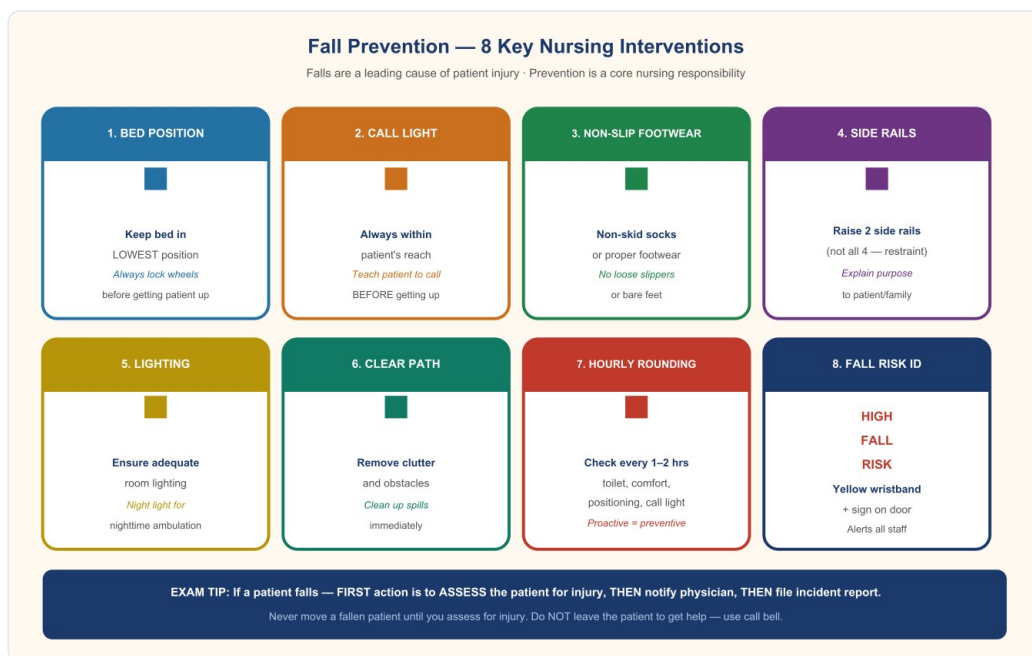


Figure 5.10 — Eight key fall-prevention interventions.



Figure 5.11 — Fire safety: RACE and PASS.

RACE: Rescue, Alarm, Confine, Extinguish/Evacuate. **PASS:** Pull, Aim, Squeeze, Sweep.

8. Ethics & Legal Quick Hits

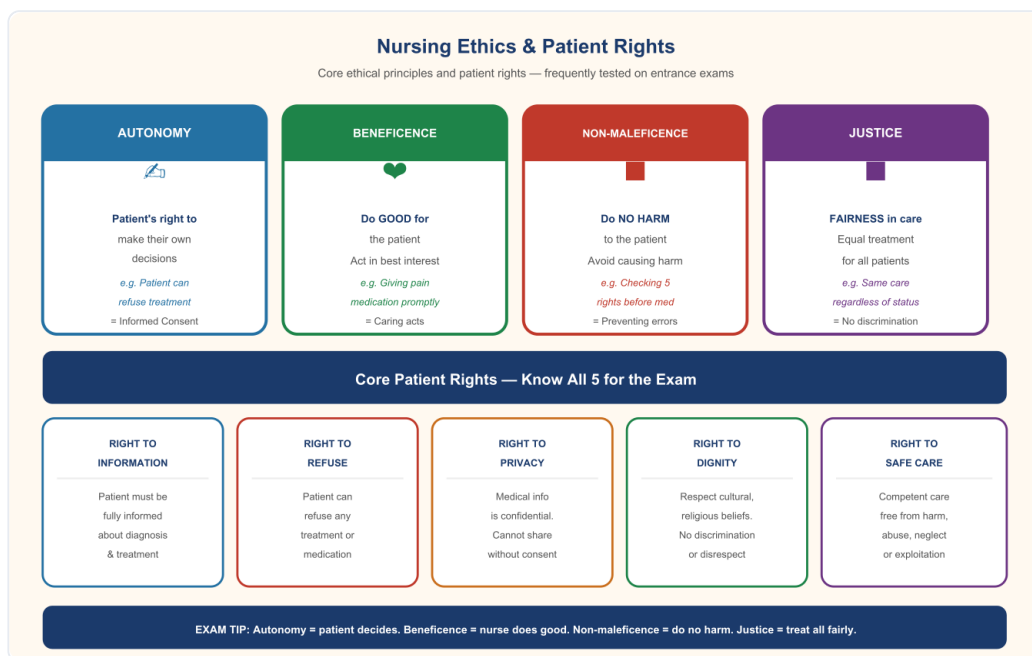


Figure 5.12 — Core ethical principles and patient rights.

Core Principles

- **Autonomy:** the patient's right to make informed decisions and refuse treatment.
- **Beneficence:** do good; act in the patient's best interest.
- **Non-maleficence:** do no harm.
- **Justice:** fair and equal treatment.
- **Fidelity:** keep promises and maintain trust.
- **Veracity:** tell the truth.

Informed Consent

- Voluntary agreement (no coercion), adequate information (risks, benefits, alternatives), and patient capacity to understand and decide.

Common Exam Trap

A witness signature is not always legally required for informed consent. Confidentiality may be breached only when required by law (mandatory reporting of abuse, certain communicable diseases, imminent harm).

9. Priority Clinical Vignettes

Apply ABCs + Safety + Acute-vs-Stable thinking.

Vignette 1

Four patients ring their call bells at once. Who is seen first?

- A. 68 y/o COPD, mild dyspnea, SpO₂ 92% on 2 L
- B. 72 y/o post-knee replacement requesting pain medication (last dose 3 h ago)
- C. 55 y/o new admission, chest pain radiating to the left arm, BP 168/94
- D. 80 y/o requesting help to the bathroom

Answer: C — new chest pain with radiation is an acute, time-sensitive cardiac symptom.

Vignette 2

Which patient is assessed first on morning rounds?

- A. Stable post-op ready for discharge teaching
- B. New-onset confusion, SpO₂ 88% on room air
- C. Requesting help to the commode
- D. Due for a routine dressing change

Answer: B — new confusion + low SpO₂ suggests acute respiratory or neurological compromise.

Vignette 3

A patient suddenly becomes unresponsive and is not breathing. Immediate priority?

- A. Check for a pulse and start CPR if none, while calling for help
- B. Give oral fluids
- C. Move the patient to a private room
- D. Document and wait for the physician

Answer: A — follows the ABCs and activates emergency response.

Vignette 4

Which lab value needs the most immediate action?

- A. Sodium 138 mEq/L
- B. Potassium 6.4 mEq/L
- C. Hemoglobin 12.8 g/dL (female)
- D. Platelets $210 \times 10^9/L$

Answer: B — potassium 6.4 is critically high and risks life-threatening arrhythmias; monitor ECG and notify the prescriber.

Vignette 5

Which situation requires acting first?

- A. Family asks about the plan of care
- B. A patient with a known penicillin allergy is about to receive cefazolin
- C. A patient requests pain medication 30 minutes early
- D. An IV site shows mild redness

Answer: B — a potential medication error with an allergy history is a safety priority.

Vignette 6

Which patient needs immediate attention?

- A. Chronic back pain, requesting repositioning
- B. 2 hours post-op, BP 88/54, HR 128
- C. Requesting a sleeping pill
- D. Scheduled IV antibiotic due in 30 minutes

Answer: B — hypotension + tachycardia post-op suggests possible hemorrhage or hypovolemia.

Quick Summary — Key Rules

- **ADPIE:** Assessment → Diagnosis → Planning → Implementation → Evaluation (a continuous cycle).
- **Priority order:** Airway → Breathing → Circulation → Safety → Comfort.
- **Infection control:** Standard Precautions for all; identify the transmission route for isolation questions.
- **Vitals red flags:** new confusion, chest pain, sudden dyspnea, SpO₂ drop, K⁺ > 5.5, active bleeding.
- **Medication safety:** the 10 Rights + double-check high-alert meds.
- **Ethics:** autonomy, beneficence, non-maleficence, justice; breach confidentiality only when legally required.

Part 6 • Logic & Reasoning

Choose only what *MUST* be true — the same discipline that keeps patients safe.

Why This Section Matters

Logic & Reasoning questions test your ability to spot patterns, draw valid conclusions, and think critically under time pressure. These skills translate directly to clinical judgment, prioritization, and safe decision-making.

1. Number & Letter Patterns

These test your ability to spot a rule and continue a sequence: alternating patterns, changing differences, letter shifts, and mixed series.

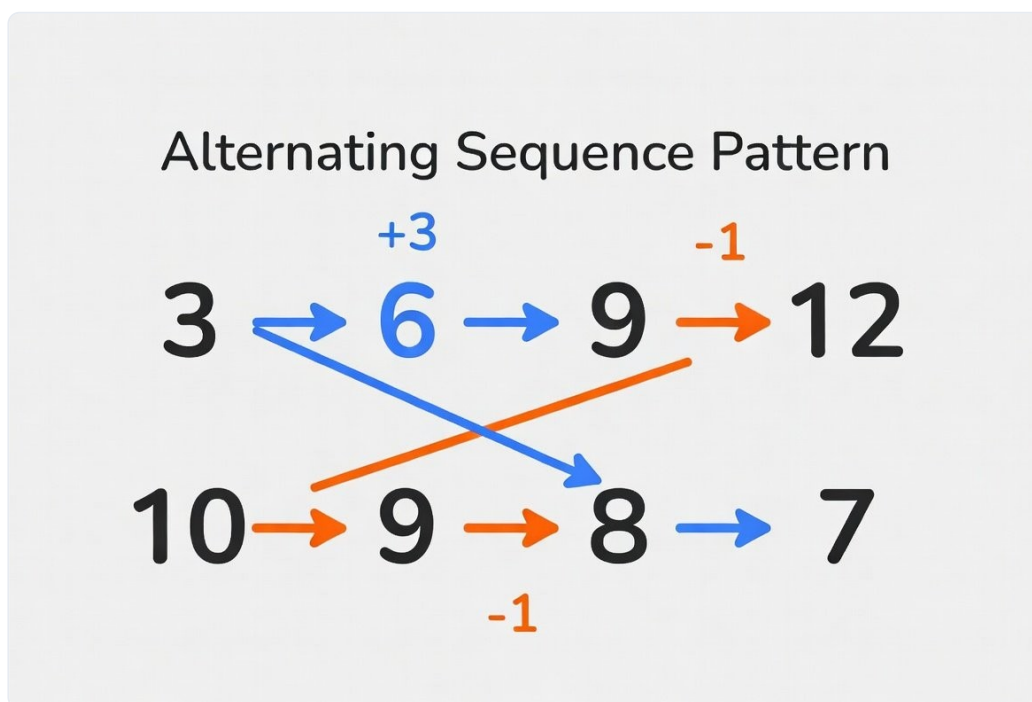


Figure 6.1 — Alternating sequence: two patterns interwoven.

A. Alternating Sequences

Look for two patterns interwoven (usually odd vs. even positions).

- Example: 3, 10, 6, 9, 9, 8, 12, __
- Odd positions: 3 → 6 → 9 → 12 (+3). Even positions: 10 → 9 → 8 (-1).
- **Answer: 7** (next even-position term: 8 - 1).

B. Arithmetic with a Twist

The common difference itself changes.

- Example: 4, 7, 11, 16, 22, __ — differences +3, +4, +5, +6 → next +7. **Answer: 29**

C. Alphabet / Letter Shifts

Treat letters as positions ($A = 1$, $Z = 26$).

- Example: Z, X, V, T, R, ___ — moving backward, skipping one each time. **Answer: P**

D. Mixed Alphanumeric Series

Track letters and numbers separately.

- Example: A1, C3, E5, G7, ___ — letters +2, numbers +2. **Answer: I9**

2. Geometric Sequences (Very High Yield)

Each term is multiplied by the same constant (the common ratio). These often tie into drug half-life and bacterial growth.

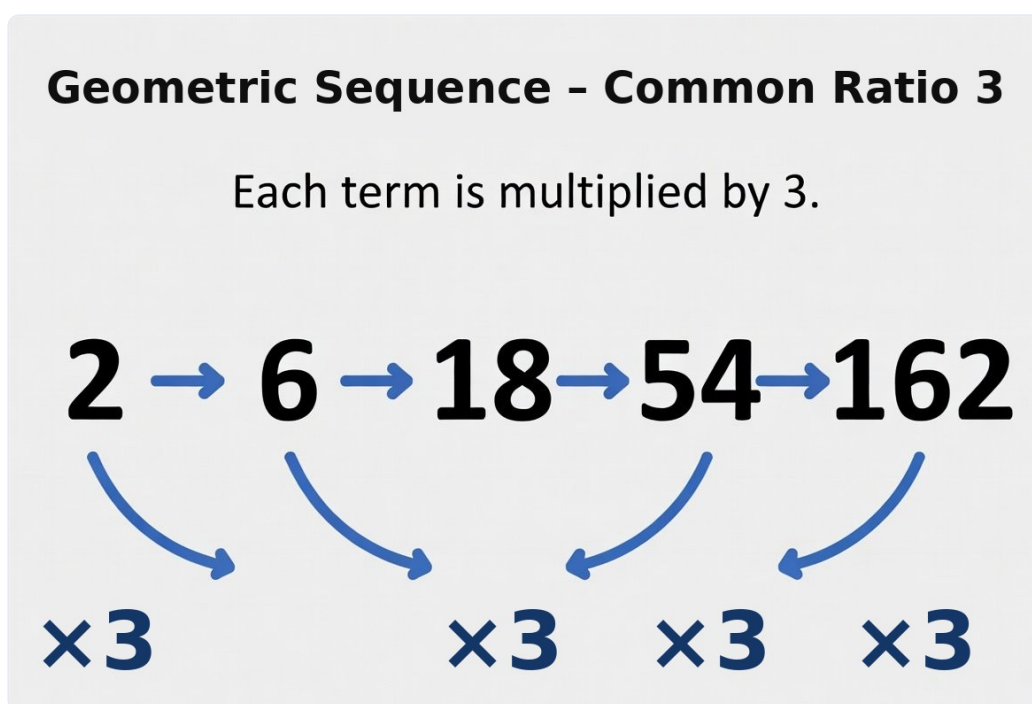


Figure 6.2 — Geometric sequence with common ratio 3.

Growth (Ratio > 1)

- Example: 2, 6, 18, 54, ___ — each $\times 3$. **Answer: 162**

Geometric Decay - Medication Half-Life

Drug concentration halves each interval.



Figure 6.3 — Geometric decay: medication half-life.

Decay / Half-Life (Ratio is a fraction)

- Example: 800 mg, 400 mg, 200 mg, 100 mg, ___ — each halved. **Answer: 50 mg**

Nursing Relevance

Drug concentrations often drop by half at regular intervals; bacterial counts can double or triple; viral loads may fall geometrically with effective treatment.

Quick Tips

- Check at least two pairs to confirm a constant ratio.
- Watch for keywords: *doubles*, *halves*, *triples*, *multiplied by*.
- When numbers shrink, the ratio is usually a fraction ($\frac{1}{2}$, $\frac{1}{3}$).

3. Verbal Analogies

Identify the relationship type first, then match it.

Part-to-Whole Relationship



Figure 6.4 — Part-to-whole analogy: alveoli:lung

Relationship	Example	Explanation
Part-to-whole	Alveoli : Lung :: Nephron : Kidney	Each is the functional unit of the organ.
Action-to-result	Triage : Prioritize :: Palliate : Relieve	The action produces the result.
Tool-to-function	Sphygmomanometer : Blood Pressure :: Otoscope : Ear	One measures, the other visualizes.
Symptom-to-condition	Polyuria + Polydipsia : Diabetes	A symptom cluster points to a condition.
Degree / intensity	Mild Pain : Discomfort :: Severe Pain : Agony	The second term escalates the first.
Opposite	Bradycardia : Tachycardia :: Hypothermia : Hyperthermia	Direct opposites.

Practice: Insulin : Pancreas :: Thyroxine : _____ → **Thyroid** (the gland that makes the hormone).

4. Deductive Logic & Seating Arrangements

Select only what *must* be true from the given information. Ignore outside knowledge.

Syllogism Example

- Premise 1: All patients with temperature $> 38.5^{\circ}\text{C}$ must receive an antipyretic.
- Premise 2: Mr. Santos has a temperature of 39.2°C .
- **Valid:** Mr. Santos must receive an antipyretic.
- **Invalid:** "Mr. Santos has an infection" — fever alone does not prove infection.

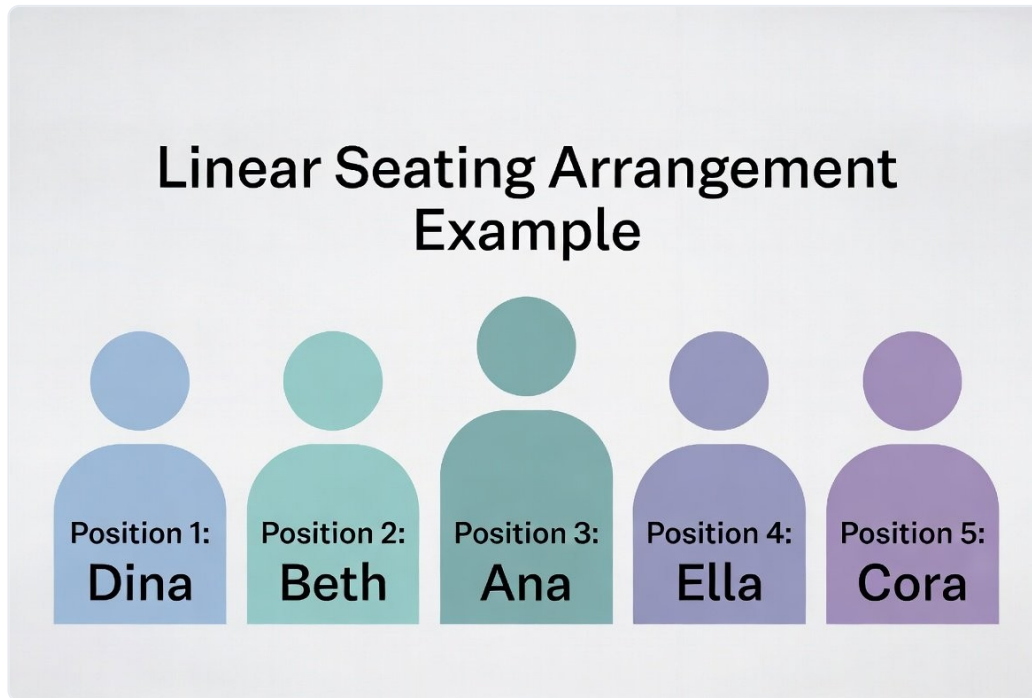


Figure 6.5 — Linear seating arrangement strategy.

Seating Strategy

Draw positions 1–n, fill fixed positions first, then work outward.

- Five nurses: Ana, Beth, Cora, Dina, Ella. Dina far left; Cora far right; Beth immediately left of Ana; Ana not at either end.
- **Solution:** Dina – Beth – Ana – Ella – Cora. Who sits between Ana and Cora? **Ella**.

5. Critical Thinking & Argument Evaluation

Nursing constantly requires evaluating claims, evidence, and hidden assumptions.

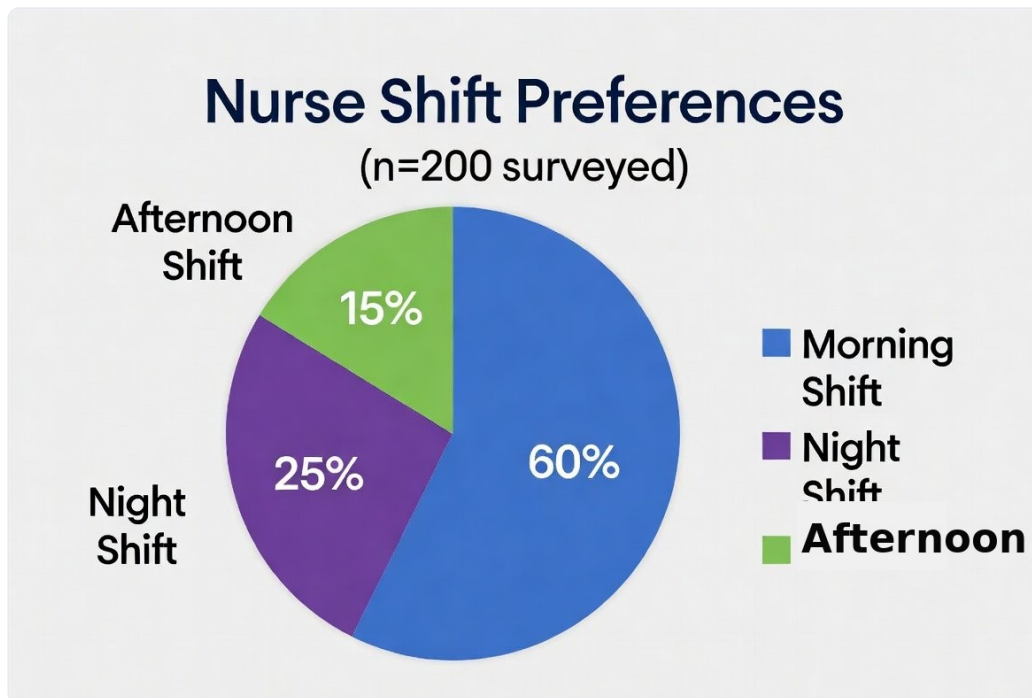


Figure 6.6 — Reading data: nurse shift preferences (n = 200).

Three Key Skills

- **Find the weakness:** "Private rooms speed recovery because of more rest." Weakness: a study showing no difference once sleep and interruptions were equalized.
- **Find the hidden assumption:** "Hourly rounding will reduce falls" assumes patients move unassisted when left alone too long.
- **Strengthen the argument:** "Units using structured hourly rounding showed a 30–40% reduction in falls" — direct supporting evidence.

Practice Questions — Logic & Reasoning

#	Question	Answer
Q-LOG-01	Next: 3, 6, 9, 12, __	15 — arithmetic (+3)
Q-LOG-02	Next: 1, 4, 9, 16, __	25 — perfect squares
Q-LOG-03	Next: 2, 4, 8, 16, __	32 — geometric (×2)
Q-LOG-04	A1, C3, E5, G7, __	I9 — letters +2, numbers +2
Q-LOG-05	Z, X, V, T, R, __	P — backward skip-one
Q-LOG-06	640, 320, 160, __ (mg)	80 — halved (half-life)
Q-LOG-07	200 cells double hourly; after 3 h?	1,600
Q-LOG-08	Alveoli : Lung :: Nephron : __	Kidney — part-to-whole
Q-LOG-09	Triage : Prioritize :: Palliate : __	Relieve — action-to-result
Q-LOG-10	Sphygmomanometer : BP :: Otoloscope : __	Ear — tool-to-function
Q-LOG-11	Who sits between Ana and Cora?	Ella
Q-LOG-12	Temp > 38.5 rule; Santos 39.2 — must be true?	He must receive an antipyretic
Q-LOG-13	Best strengthens "hourly rounding reduces falls"?	Units with it showed 30–40% fewer falls
Q-LOG-14	Next: 3, 12, 48, 192, __	768 — geometric (×4)
Q-LOG-15	Insulin : Pancreas :: Thyroxine : __	Thyroid — hormone-to-gland

Strategy Reminder

For logic questions, stay strictly within the given information. Circle keywords like "MUST be true," "best strengthens," or "most likely."

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