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Practice Questions

Try all 30 first, then check the answer key at the back.

1. A patient is ordered acetaminophen 650 mg PO. The medication is available as 325 mg tablets. How many tablets should the nurse administer?

A. 3 tablets
B. 1 tablet
C. 1.5 tablets
D. 2 tablets

2. A physician orders 1000 mL of 0.9% Normal Saline to infuse over 8 hours. What is the correct infusion rate in mL/hr?

A. 150 mL/hr
B. 100 mL/hr
C. 125 mL/hr
D. 120 mL/hr

3. An IV is ordered to infuse at 50 mL/hr using tubing with a drop factor of 15 gtt/mL. What is the correct drip rate in drops per minute?

A. 10 gtt/min
B. 13 gtt/min
C. 15 gtt/min
D. 8 gtt/min

4. A child weighing 44 pounds is prescribed amoxicillin 20 mg/kg/day divided into three doses. What is the dose per administration in mg?

A. 133 mg
B. 100 mg
C. 150 mg
D. 120 mg

5. A medication order reads morphine sulfate 8 mg IM. The available vial contains 10 mg/mL. How many mL should the nurse draw up?

A. 1.25 mL
B. 0.6 mL
C. 1 mL
D. 0.8 mL

6. Convert 0.5 grams to milligrams.

A. 5 mg
B. 50 mg
C. 500 mg
D. 5000 mg

7. A heparin drip is ordered at 1200 units/hr. The IV bag contains 25,000 units in 500 mL. What is the infusion rate in mL/hr?

A. 20 mL/hr
B. 24 mL/hr
C. 30 mL/hr
D. 18 mL/hr

8. A patient is to receive cefazolin 500 mg IM. The powder must be reconstituted with 2 mL of sterile water to yield 225 mg/mL. How many mL will the nurse administer?

A. 2.2 mL
B. 2 mL
C. 2.5 mL
D. 1.8 mL

9. A safe dosage range for digoxin is 0.125 to 0.25 mg daily. A physician orders 0.5 mg PO daily. What should the nurse do?

A. Document refusal to give
B. Administer the medication as ordered
C. Give half the dose
D. Question the order with the physician

10. An IV of 250 mL is to infuse over 2 hours using a microdrip set (60 gtt/mL). What is the drip rate in gtt/min?

A. 63 gtt/min
B. 100 gtt/min
C. 125 gtt/min
D. 150 gtt/min

11. A patient weighs 176 pounds. The medication order is for 5 mg/kg. What is the correct total dose in mg?

A. 350 mg
B. 400 mg
C. 440 mg
D. 880 mg

12. An order reads: Give potassium chloride 30 mEq PO. Available: 20 mEq per 15 mL. How many mL should be administered?

A. 22.5 mL
B. 20 mL
C. 25 mL
D. 15 mL

13. Regular insulin is ordered at 8 units/hr via infusion pump. The IV bag contains 100 units in 100 mL of 0.9% NS. What is the infusion rate in mL/hr?

A. 12 mL/hr
B. 10 mL/hr
C. 6 mL/hr
D. 8 mL/hr

14. Convert 2.5 liters to milliliters.

A. 25 mL
B. 250 mL
C. 2500 mL
D. 500 mL

15. A child weighing 15 kg is prescribed phenytoin 5 mg/kg/day in two divided doses. What is the amount per dose in mg?

A. 30 mg
B. 37.5 mg
C. 40 mg
D. 75 mg

16. A medication label reads 250 mcg per tablet. The order is for 0.5 mg. How many tablets should be given?

A. 2 tablets
B. 1 tablet
C. 0.5 tablet
D. 4 tablets

17. An IV infusion of 1500 mL is ordered to run at 100 mL/hr. How many hours will it take to infuse completely?

A. 10 hours
B. 12 hours
C. 18 hours
D. 15 hours

18. A patient is to receive vancomycin 1 gram in 250 mL over 90 minutes. What is the infusion rate in mL/hr?

A. 180 mL/hr
B. 150 mL/hr
C. 167 mL/hr
D. 125 mL/hr

19. An order reads: Administer ondansetron 0.15 mg/kg IV. The patient weighs 132 pounds. What is the correct dose in mg?

A. 8 mg
B. 9 mg
C. 10 mg
D. 12 mg

20. A patient is receiving dopamine at 12 mL/hr. The IV bag contains 400 mg in 250 mL D5W. How many mcg/min is the patient receiving?

A. 320 mcg/min
B. 300 mcg/min
C. 350 mcg/min
D. 280 mcg/min

21. Which pharmacokinetic process describes the movement of a drug from the site of administration into the bloodstream?

A. Excretion
B. Distribution
C. Metabolism
D. Absorption

22. A drug with a half-life of 6 hours is administered at 0800. Approximately what percentage of the original dose remains in the body at 2000?

A. 12.5%
B. 50%
C. 25%
D. 75%

23. The therapeutic index of a drug is best defined as the relationship between which two factors?

A. The peak level and the trough level
B. The toxic dose and the therapeutic dose
C. The loading dose and the maintenance dose
D. The absorption rate and the elimination rate

24. Which term describes the percentage of an administered drug dose that reaches systemic circulation in unchanged form?

A. Bioavailability
B. Half-life
C. Therapeutic index
D. Peak concentration

25. A drug that binds to a receptor but does not activate it and prevents other substances from binding is classified as which of the following?

A. Prodrug
B. Agonist
C. Partial agonist
D. Antagonist

26. The first-pass effect primarily affects drugs administered by which route?

A. Sublingual
B. Intravenous
C. Oral
D. Intramuscular

27. Which pharmacokinetic process involves the reversible transfer of a drug between body compartments such as blood, tissues, and organs?

A. Distribution
B. Absorption
C. Metabolism
D. Excretion

28. A patient is receiving a drug with a narrow therapeutic index. What is the primary nursing implication for this patient?

A. Loading doses are contraindicated
B. The drug can be given at varying doses with minimal risk
C. Close monitoring is required because the margin between therapeutic and toxic doses is small
D. The drug has minimal side effects

29. A patient receiving vancomycin infusion develops flushing, pruritus, and hypotension. Which adverse reaction should the nurse suspect?

A. Anaphylaxis
B. Red man syndrome
C. Nephrotoxicity
D. Stevens-Johnson syndrome

30. A patient is prescribed warfarin therapy. Which laboratory value is most important for the nurse to monitor?

A. White blood cell count
B. Platelet count
C. Hemoglobin
D. INR

Answer Key & Explanations

1. D — 2 tablets
Using the formula: Desired dose (650 mg) divided by Available dose (325 mg per tablet) = 650 / 325 = 2 tablets.

2. C — 125 mL/hr
To calculate mL/hr: Total volume (1000 mL) divided by Time in hours (8 hours) = 1000 / 8 = 125 mL/hr.

3. B — 13 gtt/min
Formula: (mL/hr × drop factor) / 60 minutes = (50 × 15) / 60 = 750 / 60 = 12.5, rounded to 13 gtt/min.

4. A — 133 mg
First convert pounds to kg: 44 lb / 2.2 = 20 kg. Daily dose: 20 kg × 20 mg/kg = 400 mg/day. Per dose: 400 mg / 3 doses = 133.3 mg, rounded to 133 mg per dose.

5. D — 0.8 mL
Using the formula: Desired dose (8 mg) divided by Available concentration (10 mg/mL) = 8 / 10 = 0.8 mL.

6. C — 500 mg
To convert grams to milligrams, multiply by 1000. Therefore, 0.5 g × 1000 = 500 mg.

7. B — 24 mL/hr
Using ratio-proportion: 25,000 units : 500 mL = 1200 units : X mL. Cross multiply: 25,000X = 600,000. X = 600,000 / 25,000 = 24 mL/hr.

8. A — 2.2 mL
After reconstitution, the concentration is 225 mg/mL. Using the formula: Desired dose (500 mg) divided by Available concentration (225 mg/mL) = 500 / 225 = 2.22 mL, rounded to 2.2 mL.

9. D — Question the order with the physician
The ordered dose of 0.5 mg exceeds the maximum safe dose of 0.25 mg daily (it is double the maximum). The nurse should question this order with the physician before administering to prevent toxicity.

10. C — 125 gtt/min
For microdrip (60 gtt/mL), the drip rate equals the hourly rate. First find mL/hr: 250 mL / 2 hr = 125 mL/hr. With microdrip, 125 mL/hr = 125 gtt/min.

11. B — 400 mg
First convert pounds to kg: 176 lb / 2.2 = 80 kg. Then calculate dose: 80 kg × 5 mg/kg = 400 mg.

12. A — 22.5 mL
Using ratio-proportion: 20 mEq : 15 mL = 30 mEq : X mL. Cross multiply: 20X = 450. X = 450 / 20 = 22.5 mL.

13. D — 8 mL/hr
The concentration is 100 units in 100 mL = 1 unit/mL. To deliver 8 units/hr: 8 units / 1 unit per mL = 8 mL/hr.

14. C — 2500 mL
To convert liters to milliliters, multiply by 1000. Therefore, 2.5 L × 1000 = 2500 mL.

15. B — 37.5 mg
Calculate total daily dose: 15 kg × 5 mg/kg = 75 mg/day. Divide by 2 doses: 75 mg / 2 = 37.5 mg per dose.

16. A — 2 tablets
First convert 0.5 mg to mcg: 0.5 mg × 1000 = 500 mcg. Then: 500 mcg / 250 mcg per tablet = 2 tablets.

17. D — 15 hours
Total volume (1500 mL) divided by infusion rate (100 mL/hr) = 1500 / 100 = 15 hours.

18. C — 167 mL/hr
Convert 90 minutes to hours: 90 / 60 = 1.5 hours. Then calculate rate: 250 mL / 1.5 hr = 166.7 mL/hr, rounded to 167 mL/hr.

19. B — 9 mg
Convert weight to kg: 132 lb / 2.2 = 60 kg. Calculate dose: 60 kg × 0.15 mg/kg = 9 mg.

20. A — 320 mcg/min
First find mg/hr: (400 mg / 250 mL) × 12 mL/hr = 19.2 mg/hr. Convert to mcg/min: (19.2 mg × 1000 mcg/mg) / 60 min = 19,200 / 60 = 320 mcg/min.

21. D — Absorption
Absorption is the process by which a drug moves from its site of administration (such as the GI tract, muscle, or skin) into the systemic circulation. This is the first phase of pharmacokinetics.

22. C — 25%
After one half-life (6 hours, at 1400), 50% remains. After two half-lives (12 hours, at 2000), 25% of the original dose remains. Each half-life reduces the drug concentration by half.

23. B — The toxic dose and the therapeutic dose
The therapeutic index is the ratio between the dose that produces toxicity and the dose that produces a therapeutic effect. A wider therapeutic index indicates a safer drug with a larger margin between effective and toxic doses.

24. A — Bioavailability
Bioavailability refers to the fraction of an administered dose that reaches the systemic circulation unchanged and is available to produce its therapeutic effect. Intravenous drugs have 100% bioavailability, while oral drugs may have lower bioavailability due to first-pass metabolism.

25. D — Antagonist
An antagonist binds to a receptor without activating it and blocks the binding of agonists or endogenous ligands, thereby preventing receptor activation and the associated biological response.

26. C — Oral
The first-pass effect occurs when oral drugs are absorbed from the GI tract into the portal circulation and metabolized by the liver before reaching systemic circulation. This can significantly reduce the bioavailability of orally administered drugs.

27. A — Distribution
Distribution is the process by which a drug is transported from the bloodstream to various tissues and organs throughout the body. Factors affecting distribution include blood flow, protein binding, and tissue permeability.

28. C — Close monitoring is required because the margin between therapeutic and toxic doses is small
A narrow therapeutic index means there is a small margin between therapeutic and toxic doses. Close monitoring of drug levels and patient response is essential to prevent toxicity while maintaining therapeutic effectiveness.

29. B — Red man syndrome
Red man syndrome is a vancomycin-related adverse effect characterized by flushing, pruritus, hypotension, and sometimes chest pain. It occurs due to histamine release when the drug is infused too rapidly.

30. D — INR
INR (International Normalized Ratio) is the laboratory value used to monitor warfarin effectiveness and adjust dosing. Therapeutic range is typically 2-3 for most indications.

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