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MULTIPLE CHOICE

1. The process of a drug being altered chemically is:
   a. distribution.
   b. absorption.
   c. elimination.
   d. metabolism.

   ANS: D
   Metabolism is the third step in the life of the drug, also known as pharmacokinetics and it is an actual chemical alteration of the original drug.

   DIF: Recall REF: p. 9 OBJ: 1
   TOP: CSPT Exam 1.3 (1.0 Medications and Components)

2. Any condition that a drug should not be used is called a(n):
   a. contraindication.
   b. indication.
   c. allergy.
   d. adverse reaction.

   ANS: A
   A contraindication is a reason that makes it ill advised to order a specific drug for treatment.

   DIF: Recall REF: p. 9 OBJ: 2
   TOP: CSPT Exam 1.1 (1.0 Medications and Components)

3. When a drug is administered and the intended effect occurs, what is it called?
   a. Toxic effect
   b. Therapeutic effect
   c. Adverse effect
   d. Side effect

   ANS: B
   The therapeutic effect of a drug is the intended effect.

   DIF: Recall REF: p. 9 OBJ: 2
   TOP: CSPT Exam 1.3 (1.0 Medications and Components)

4. Undesirable yet unexpected effects that are not widely known or reported are known as:
   a. side effects.
   b. toxic effects.
   c. adverse effects.
   d. allergies.

   ANS: C
   Adverse drug reactions are drug effects that are unexpected and unwanted and are usually reported in only a few patients.

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DIF: Recall REF: p. 9 OBJ: 2
TOP: CSPT Exam 1.1 (1.0 Medications and Components)

5. When dosing a drug, sometimes one drug can magnify another the patient is currently taking. This is said to be caused by what factor?
   a. Disease
   b. Age
   c. Body weight
   d. Drug interactions

   ANS: D
   Drug interactions occur when one drug prolongs or magnifies the effect of another being given at the same time.

   DIF: Comprehension REF: p. 11 OBJ: 2
   TOP: CSPT Exam 1.3 (1.0 Medications and Components)

6. Which of the following is the correct order of the steps involved in pharmacokinetics?
   a. Absorption, metabolism, distribution, and excretion
   b. Distribution, absorption, metabolism, and excretion
   c. Absorption, distribution, metabolism, and excretion
   d. Distribution, metabolism, absorption, and excretion

   ANS: C
   Pharmacokinetics is the process that drugs go through in the body. It involves four steps, absorption, distribution, metabolism, and excretion.

   DIF: Application REF: p. 8 OBJ: 1
   TOP: CSPT Exam 1.3 (1.0 Medications and Components)

7. Which of the following is the second step involved in pharmacokinetics?
   a. Excretion
   b. Absorption
   c. Distribution
   d. Metabolism

   ANS: C
   Distribution is the second step in the process of pharmacokinetics. This step allows the drug to be distributed throughout the body so they can act on the body.

   DIF: Application REF: p. 8 OBJ: 1
   TOP: CSPT Exam 1.3 (1.0 Medications and Components)

8. IV medications have the most rapid onset of action because:
   a. they are absorbed in the digestive system.
   b. they are absorbed in the muscle tissue.
   c. they are absorbed in the bloodstream.
   d. they are absorbed in the subcutaneous tissue.

   ANS: C

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IV medications are injected directly into the bloodstream, allowing the medication to act quickly.

DIF: Comprehension REF: p. 9 OBJ: 2
TOP: CSPT Exam 1.3 (1.0 Medications and Components)

9. Drug effects that are predictable and widely reported and can be found in literature are known as a(n):
   a. adverse reaction.
   b. therapeutic effect.
   c. side effect.
   d. intended effect.

ANS: C
Side effects are drug effects that were found during studies of the drug. They are predictable and widely reported and can be found in literature, such as the package insert.

DIF: Recall REF: p. 9 OBJ: 2
TOP: CSPT Exam 1.5 (1.0 Medications and Components)

10. Why are pediatric patients dosed differently than adult patients?
   a. A pediatric patient has a lower percentage of body water and a higher percentage of body fat than an adult patient.
   b. A pediatric patient's brain has a protective barrier known as the blood–brain barrier.
   c. A pediatric patient has a higher percentage of body water and lower percentage of body fat than an adult patient.
   d. A pediatric patient's plasma protein is higher than it is in an adult patient.

ANS: C
There are multiple reasons why pediatric patients are dosed differently from adult patients. One reason is that children have a higher percentage of body water and a lower percentage of body fat than adults, causing drugs to stay in the body longer, possibly causing toxicity.

DIF: Comprehension REF: p. 9-10 OBJ: 2
TOP: CSPT Exam 1.3 (1.0 Medications and Components)

11. The NDC number identifies the specific:
   a. drug, expiration date, and manufacturer.
   b. drug, package size, and expiration date.
   c. drug, manufacturer, package size.
   d. manufacturer, expiration date, and package size.

ANS: C
The purpose of the National Drug Code (NDC) is to identify the specific drug, the manufacturer of the drug, and the package size it is in.

DIF: Comprehension REF: p. 12 OBJ: 3
TOP: CSPT Exam 1.5 (1.0 Medications and Components)

12. The label of every IV drug package must include all of the following *except*:
   a. generic name.

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b. concentration of the liquid.
c. chemical name.
d. storage requirements.

ANS: C
Although every drug has an individual chemical name, it does not have to appear on the label of the drug package.

DIF: Application REF: p. 12 OBJ: 3
TOP: CSPT Exam 4.1 (4.0 Handling, Packaging, Storage, and Disposal)

13. Which of the following is *not* often taken into consideration for parenteral medications?
a. Age
b. Height
c. Weight
d. Existing conditions

ANS: B
Height is not usually something that needs to be taken into consideration when ordering a medication.

DIF: Application REF: p. 9-11 OBJ: 2
TOP: CSPT Exam 1.3 (1.0 Medications and Components)

14. The step of pharmacokinetics that could be affected by failed kidneys is:
a. distribution.
b. excretion.
c. metabolism.
d. absorption.

ANS: B
Most drugs are excreted through the liver or the kidneys. If a patient has renal failure, then this could cause the drug to stay in the system longer and could become toxic.

DIF: Recall REF: p. 8 OBJ: 2
TOP: CSPT Exam 1.3 (1.0 Medications and Components)

15. The age variables of a child are between the ages of:
a. 2 and 12 years.
b. 1 and 12 years.
c. 3 and 13 years.
d. 2 and 15 years.

ANS: A
Concerning medications, a “child” is anyone between the ages of 2 and 12 years of age.

DIF: Recall REF: p. 10 OBJ: 2
TOP: CSPT Exam 1.3 (1.0 Medications and Components)

16. The _____ of the drug is the amount of drug given at one time.
a. strength
b. dose

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c. quantity
d. volume

ANS: B
The dose is the amount of drug given at one time.

DIF: Recall REF: p. 9 OBJ: 2
TOP: CSPT Exam 1.3 (1.0 Medications and Components)

17. The removal of a drug from the body is known as:
a. metabolism.
b. absorption.
c. distribution.
d. excretion.

ANS: D
The fourth and final step in pharmacokinetics, in which the body rids itself of the drug, is called excretion.

DIF: Recall REF: p. 9 OBJ: 1
TOP: CSPT Exam 1.3 (1.0 Medications and Components)

18. The drug effect that occurs when too little of a dose is administered is known as:
a. therapeutic effect.
b. adverse effect.
c. side effect.
d. subtherapeutic effect.

ANS: D
Subtherapeutic effect is a drug effect that occurs when a patient is underdosed, which could cause harm to the patient.

DIF: Recall REF: p. 9 OBJ: 2
TOP: CSPT Exam 1.3 (1.0 Medications and Components)

19. Which of the following reference material would be the best choice to look up an incompatibility between ampicillin IV and heparin?
a. USP-NF
b. *Trissel's Handbook on Injectable Drugs*
c. *PDR*
d. *Red Book*

ANS: B
Trissel's Handbook on Injectable Drugs is one of the preferred references to use in regards to compatibility questions about injectable drugs.

DIF: Application REF: p. 12 OBJ: 3
TOP: CSPT Exam 1.5 (1.0 Medications and Components)

20. The "special" place where drugs go to allow a specific action to take place is/are known as:
a. receptor sites.
b. blood–brain barrier.

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c. digestive system.
d. adverse reaction site.

ANS: A
The receptor sites, located on the target cells, are the "special" places where drugs go to allow a specific action to take place.

DIF: Comprehension REF: p. 8 OBJ: 2
TOP: CSPT Exam 1.1 (1.0 Medications and Components)

21. What term is used for an intravenous solution that is free from bacteria and other microorganisms?
a. Clarity
b. Sterility
c. pH
d. Tonicity

ANS: B
Sterility is being free from bacteria and other microorganisms.

DIF: Recall REF: p. 13 OBJ: 4
TOP: CSPT Exam 1.7 (1.0 Medications and Components)

22. What term is used to describe a solution containing the concentration of dissolved substances closest to the red blood cells?
a. Hypertonic
b. Hypotonic
c. Isotonic
d. None of the options

ANS: C
Any solution containing a concentration of dissolved substances that is the same as the concentration in red blood cells is an isotonic solution.

DIF: Recall REF: p. 13 OBJ: 4
TOP: CSPT Exam 1.7 (1.0 Medications and Components)

23. Both 0.9% sodium chloride and 5% dextrose solutions are said to be:
a. isotonic.
b. hypotonic.
c. hypertonic.
d. osmolar.

ANS: A
Examples of an isotonic solution include 5% dextrose and 0.9% sodium chloride.

DIF: Recall REF: p. 13 OBJ: 4
TOP: CSPT Exam 1.7 (1.0 Medications and Components)

24. When red blood cells swell due to the surrounding fluid having a lower concentration of dissolved substances, it is said to be:
a. hypertonic.

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b. hypotonic.
c. isotonic.
d. admixture.

ANS: B
A hypotonic solution is any solution containing a concentration of dissolved substances less than red blood cells, causing the cells to swell as the fluid moves in.

DIF: Recall REF: p. 13 OBJ: 4
TOP: CSPT Exam 1.7 (1.0 Medications and Components)

25. Medications that are added to the final fluid are known as:
a. admixtures.
b. particulate matter.
c. additives.
d. isotonic fluids.

ANS: C
Additives are the medications that are added to the final fluid.

DIF: Recall REF: p. 13 OBJ: 4
TOP: CSPT Exam 1.1 (1.0 Medications and Components)

26. What fluid is used primarily as a source of fluid and carbohydrates for nutrition?
a. Lactated Ringer
b. 0.9% sodium chloride
c. 5% dextrose
d. 10% dextrose

ANS: C
Dextrose 5% is primarily used as a carbohydrate for nutrition and as a source of fluid.

DIF: Application REF: p. 13 OBJ: 4
TOP: CSPT Exam 1.1 (1.0 Medications and Components)

27. An IV admixture is said to have what when the prescribed drugs cannot be combined satisfactorily?
a. Compatibility
b. Incompatibility
c. Adverse effects
d. Side effects

ANS: B
An unsatisfactory combination of two particular drugs is known as incompatibility.

DIF: Comprehension REF: p. 16 OBJ: 5
TOP: CSPT Exam 1.7 (1.0 Medications and Components)

28. Drugs may need to be given the time to dilute before added back to back. This is attributable to what factor?
a. Buffer capacity
b. Complexation

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c. Order of mixing
d. IV solution

ANS: C
Order of mixing refers to mixing two particular drugs together only after allowing one to completely diluted into the fluid, causing their chance for contact to be much less.

DIF: Application REF: p. 17 OBJ: 6
TOP: CSPT Exam 1.4 (1.0 Medications and Components)

29. Rubber cores from vials are examples of what type of matter?
a. Particulate
b. Incompatible
c. Preservative
d. Turbidity

ANS: A
Rubber cores found in fluid are also known as particulate matter.

DIF: Application REF: p. 16 OBJ: 5
TOP: CSPT Exam 1.7 (1.0 Medications and Components)

30. This drug should not be refrigerated.
a. Ampicillin
b. Insulin
c. Metronidazole
d. Cefazolin

ANS: C
Metronidazole (Flagyl) should be kept at room temperature because refrigeration causes participate to form.

DIF: Application REF: p. 16 OBJ: 6
TOP: CSPT Exam 1.6 (1.0 Medications and Components)

31. The process of adding a diluent to a powder form of a medication is called:
a. admixture.
b. reconstitution.
c. precipitation.
d. particulate

ANS: B
Reconstituting is the process of adding a diluent to a powder form of a medication.

DIF: Comprehension REF: p. 17 OBJ: 6
TOP: CSPT Exam 1.4 (1.0 Medications and Components)

32. Acidic solutions have a pH:
a. around 7.
b. between 8 and 14.
c. between 0 and 9.
d. between 0 and 6.

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ANS: D
The pH scale ranges from 0 to 14 with 0 to 6 being acidic, 7 being neutral, and 8 to 14 being alkaline.

DIF: Recall REF: p. 17 OBJ: 5
TOP: CSPT Exam 1.7 (1.0 Medications and Components)

33. All of the following are factors to consider about the stability of an IV medication once mixed *except*:
    a. smell.
    b. time.
    c. light.
    d. temperature.

ANS: A
Some medications have a distinctive smell; this is not a cause for concern when you are stability.

DIF: Application REF: p. 12 OBJ: 6
TOP: CSPT Exam 1.4 (1.0 Medications and Components)

34. The ability to combine drugs or substances without interfering with their action is known as:
    a. stability.
    b. compatibility.
    c. osmolarity.
    d. incompatibility.

ANS: B
Compatibility is the ability to combine drugs without interfering with the action of one another.

DIF: Recall REF: p. 16 OBJ: 6
TOP: CSPT Exam 1.7 (1.0 Medications and Components)

35. Storage information can be found in which reference?
    a. *Trissel's Handbook on Injectable Drugs*
    b. Package insert
    c. Electronic databases
    d. All of the options

ANS: D
The technician or pharmacist can find storage information in the package inserts, electronic databases, and *Trissel's Handbook on Injectable Drugs.*

DIF: Application REF: p. 12 OBJ: 7
TOP: CSPT Exam 1.5 (1.0 Medications and Components)

36. The technician should always label the final product with:
    a. storage requirements.
    b. diluent added.
    c. patient's name.
    d. patient's diagnosis.

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ANS: A
All final IV preparations must have the storage requirement on the label, so it will be stored in the proper place.

DIF: Application REF: p. 12 OBJ: 7
TOP: CSPT Exam 4.1 (4.0 Handling, Packaging, Storage, and Disposal)

37. The technician should avoid:
a. osmolarities.
b. compatibilities.
c. sterility.
d. incompatibilities.

ANS: D
Incompatibilities are unwanted or unexpected effects caused by two or more drugs or a drug and the fluid it is added to and should be avoided when possible.

DIF: Comprehension REF: p. 16 OBJ: 7
TOP: CSPT Exam 1.7 (1.0 Medications and Components)

38. Solid material that is separated from a solution often caused from reactions drugs or drugs and certain fluids is known as:
a. particulate.
b. precipitation.
c. osmosis.
d. coring.

ANS: B
Precipitation is the solid material or deposits that are separated from a solution often caused from reaction drugs or drugs and certain fluids.

DIF: Recall REF: p. 17 OBJ: 6
TOP: CSPT Exam 1.7 (1.0 Medications and Components)

39. This IV fluid contains primary electrolytes found in the plasma.
a. 5% dextrose
b. 0.9% sodium chloride
c. Lactated Ringer
d. 10% dextrose

ANS: C
Lactated Ringer contains primary electrolytes found in the plasma and is used for source of electrolytes or as a fluid replacement.

DIF: Recall REF: p. 16 OBJ: 4
TOP: CSPT Exam 1.1 (1.0 Medications and Components)

40. Movement of a solvent across a cell membrane is known as:
a. reconstitution.
b. osmosis.
c. clarity.

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d. coring.

ANS: B
Osmosis is the movement of a solvent (water) across a cell membrane from a lower osmolarity to a higher osmolarity.

DIF: Recall REF: p. 14 OBJ: 4
TOP: CSPT Exam 1.7 (1.0 Medications and Components)

TRUE/FALSE

1. The dose of a drug is the amount of drug given and is the same for every patient.

   ANS: F
   The dose of a drug is the amount of drug given, but it varies with each patient, depending on weight, age, specific condition, and so on.

   DIF: Comprehension REF: p. 9 OBJ: 2
   TOP: CSPT Exam 1.3 (1.0 Medications and Components)

2. Absorption is the movement of a drug through the body into tissues and organs.

   ANS: F
   Absorption is the movement of a drug into the circulatory system.

   DIF: Comprehension REF: p. 8 OBJ: 1
   TOP: CSPT Exam 1.3 (1.0 Medications and Components)

3. The primary enzyme responsible for metabolism is cytochrome P450.

   ANS: T
   Cytochrome P450 is the primary enzyme responsible for metabolism.

   DIF: Recall REF: p. 9 OBJ: 1
   TOP: CSPT Exam 1.3 (1.0 Medications and Components)

4. Plasma proteins are lower in pediatric patient that in adults, allowing more of the drug to remain bound in the body.

   ANS: F
   The plasma protein is lower in the pediatric patient, which allows more of the drug to remain unbound, or “free,” in the body.

   DIF: Comprehension REF: p. 10 OBJ: 2
   TOP: CSPT Exam 1.3 (1.0 Medications and Components)

5. The adult brain has a protective barrier called the blood–brain barrier, which protects it from fat-soluble substances.

   ANS: F
   The blood–brain barrier protects the brain from water-soluble substances.

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DIF: Comprehension REF: p. 10 OBJ: 2
TOP: CSPT Exam 1.3 (1.0 Medications and Components)

6. The liver and kidneys are not fully developed in pediatric patients. This allows metabolism and excretion to occur more slowly than it does in adults.

ANS: T
Metabolism and excretion occur more slowly in pediatric patients than they do in adult patients because children's livers and kidneys are not fully developed.

DIF: Comprehension REF: p. 10 OBJ: 2
TOP: CSPT Exam 1.3 (1.0 Medications and Components)

7. Common side effects to medications include nausea, dry mouth, and dizziness.

ANS: T
There are many common side effects of medications, including dizziness, nausea, and dry mouth.

DIF: Recall REF: p. 9 OBJ: 2
TOP: CSPT Exam 1.1 (1.0 Medications and Components)

8. Adverse effects can be found in manufacturer's literature for a medication and are usually widely reported.

ANS: F
Side effects can be found in manufacturer's literature for a medication and are usually widely reported. Adverse effects are unexpected, can cause harm to a patient, and are not widely reported.

DIF: Comprehension REF: p. 9 OBJ: 2
TOP: CSPT Exam 1.5 (1.0 Medications and Components)

9. As aging occurs, elderly patients experience many differences in the pharmacokinetics process.

ANS: T
The pharmacokinetics process differs in elderly patients throughout the aging process. This is due to the changing of bodily functions.

DIF: Comprehension REF: p. 10 OBJ: 2
TOP: CSPT Exam 1.3 (1.0 Medications and Components)

10. The amount of drug given is directly related to weight because it determines the concentration of drug in the body.

ANS: T
The amount of drug required is directly related to weight because it determines the concentration of drug in the body.

DIF: Comprehension REF: p. 11 OBJ: 2
TOP: CSPT Exam 1.3 (1.0 Medications and Components)

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11. Fluid that is too acidic or too alkaline can cause pain or discomfort when entering the body.

ANS: T
A patient can feel pain or discomfort when they receive a fluid, that is, too acidic or too alkaline.

DIF: Comprehension REF: p.13 OBJ: 4
TOP: CSPT Exam 1.7 (1.0 Medications and Components)

12. The stability from the manufacturer's packaging on an IV fluid is not affected when medications are added.

ANS: F
The stability from the manufacturer's packaging on an IV fluid is changed after a medication is added.

DIF: Comprehension REF: p. 16 OBJ: 6
TOP: CSPT Exam 1.4 (1.0 Medications and Components)

13. Technicians must *always* double-check their calculation.

ANS: T
When technicians perform calculations, they must always double-check them to make sure they are preparing the medication correctly.

DIF: Comprehension REF: p. 12 OBJ: 7
TOP: CSPT Exam 1.4 (1.0 Medications and Components)

14. The package insert of a medication sometimes states the storage requirements for the medication.

ANS: F
The package insert always states the storage requirements for the medication.

DIF: Comprehension REF: p. 12 OBJ: 7
TOP: CSPT Exam 1.5 (1.0 Medications and Components)

15. Patient safety depends on the knowledge the technician has about the medication and any special considerations to go along with it such as storage requirements, mixing, and proper handwashing.

ANS: T
It is very important that technicians be knowledgeable about the medications they are preparing, including any special considerations. The patient's safety depends on it.

DIF: Comprehension REF: p. 7 OBJ: 7
TOP: CSPT Exam 1.4 (1.0 Medications and Components) | CSPT Exam 1.6 (1.0 Medications and Components) | CSPT Exam 1.7 (1.0 Medications and Components)

16. All drugs are compatible with any IV fluid.

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ANS: F
Some drugs are only compatible with certain IV fluids.

DIF: Comprehension REF: p. 17 OBJ: 6
TOP: CSPT Exam 1.7 (1.0 Medications and Components)

17. If the medication and the fluid it is mixed in have conflicting pH values, the drug is not affected.

ANS: F
If a medication and the fluid it is mixed in have a conflicting pH values, it will cause the drug to degrade or form a precipitate.

DIF: Comprehension REF: p. 17 OBJ: 6
TOP: CSPT Exam 1.7 (1.0 Medications and Components)

18. Some drugs must not be exposed to light and should be protected because the medication will be degraded or destroyed.

ANS: T
Some medications will be destroyed if exposed to light. The technician must put these medications in a brown bag protect from light as soon as the preparation is complete so the medication will not be degraded or destroyed.

DIF: Comprehension REF: p. 17 OBJ: 5
TOP: CSPT Exam 1.7 (1.0 Medications and Components)

19. Some medications must be stored in the freezer.

ANS: T
Some medications must be stored in the freezer until they are to be given. After being removed from the freezer, its lifespan begins to decrease.

DIF: Comprehension REF: p. 16 OBJ: 5
TOP: CSPT Exam 1.4 (1.0 Medications and Components)

20. Color changes or particulate matter do not always form immediately.

ANS: T
Changes to the preparation, such as color changes or particulate matter, do not always occur immediately. It is important for other health care professionals to contact the pharmacy if they notice any of these changes before it is given to the patient.

DIF: Comprehension REF: p. 16 OBJ: 5
TOP: CSPT Exam 1.7 (1.0 Medications and Components)

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