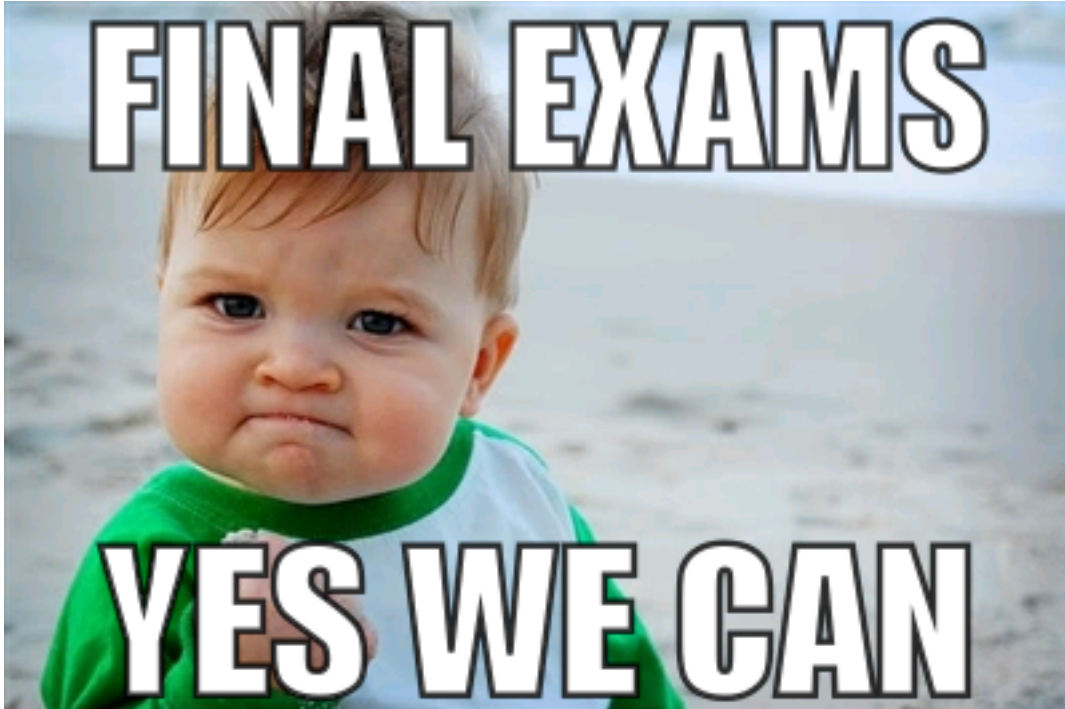


## Forensics Practice Final - KEY

This is a cumulative practice test, meaning there are questions from everything we have learned since the beginning of the year. All of these questions have come from old tests/quizzes. Some units are not represented here because later units covered the same material in more detail. All questions come from the notes/activities covered in class. All material can be found on the class website (LSCANLONSCIENCE.WEEBLY.COM). The questions from the actual final will come from this bank of questions.



**IN ADDITION TO THESE QUESTIONS, STUDY THE VOCABULARY WORDS ON THE CROSSWORD PUZZLE.**

**THE FINAL EXAM WILL CONSIST OF 50 MULTIPLE CHOICE QUESTIONS FROM OLD EXAMS AND QUIZZES**

**YOU WILL BE ALLOWED TO USE AN ENTIRE PIECE OF LETTER-SIZE PAPER 8.5"X11" ON THE EXAM WITH WHATEVER YOU WANT TO WRITE ON IT.**

### UNIT 1: Introduction to Forensics

- Which of the following is not a fact?
  - There are many people that work together at a crime scene to collect and analyze data.
  - Arguably, the most important person at a crime scene is the first officer to arrive.**
  - An entomologist is a type of specialist that estimates the age of insects developing on human remains.
  - The medical examiner may perform autopsies to determine the cause of death.
- Which of the following is true about grand juries?
  - They are used instead of preliminary hearings**
  - They are only used in misdemeanor cases
  - They determine if suspect is innocent or guilty
  - It consists of 12 citizens
- The *Frye v. United States* case resulted in the
  - Development of the grand jury
  - The requirement for arresting officers to read the Miranda rights to the person being arrested
  - The idea of "innocent until proven guilty"
  - The "general acceptance" test**

4. Testimonial evidence
  - a. Is evidence that includes oral or written statements given to police as well as testimony in court by people who witnessed an event**
  - b. Is viewed to be very reliable because it is based on eyewitness accounts
  - c. Has a small influence on the outcome of an investigation or trial
  - d. Is accurate because all the people who witness the crime will view the scene the same way
  
5. The Innocence Project found that faultiest convictions were based on
  - a. Out-of-date investigating equipment
  - b. Poor DNA sampling**
  - c. Inaccurate eyewitness accounts
  - d. Officers not thoroughly observing a crime scene
  
6. When a person pleads not guilty because of insanity,
  - a. The judge decides if there is enough evidence to stand trial
  - b. The judge directly passes a sentence
  - c. Only the prosecution presents
  - d. The defendant must provide convincing evidence that they were unable to appreciate the nature of the crime at the time of the offense**
  
7. Which of the following is a factor that makes a person a particularly good or bad witness?
  - a. Age
  - b. Race
  - c. Other people
  - d. All of the above**
  
8. A robbery is committed in Time Square in Manhattan. Which of the following individuals would be the best eyewitness in this case? All were present at the time of the crime.
  - a. Bran. A young child who was sleeping in his stroller.
  - b. Jon. A business man who works in the office across the street.**
  - c. Dany. A woman who took a new route during her morning jog and just happened to pass by the crime scene.
  - d. Jamie. A tourist taking in all the sights and sounds of Time Square.

## UNIT 4: Fingerprints

1. Which of the following is NOT a principal of fingerprints?
  - a. A fingerprint is an individual characteristic; no two people have been found with the exact same fingerprint pattern
  - b. A fingerprint pattern will remain unchanged for the life of an individual; however, the print itself can change due to permanent scars and skin diseases
  - c. Dactyloscopy is the study of fingerprint identifications; police investigators collect dactylograms**
  - d. Fingerprints have general characteristic ridge patterns that allow them to be systematically identified
  
2. When a whorl doesn't fit into any particular category, it is classified as
  - a. An accidental
  - b. An accidental**
  - c. A specialty
  - d. An ulnar
  
3. When a ridge characteristic does not fit into any particular category, it is classified as
  - a. An accidental
  - b. An accidental
  - c. A specialty**
  - d. An ulnar
  
4. A forensic analyst needs to lift latent prints off a shiny surface. Which technique should they use?
  - a. Ninhydrin
  - b. Cyanoacrylate
  - c. Black powder**
  - d. Magnetic powder
  
5. How can you classify this fingerprint?
6. How can you classify this fingerprint?



- a. Loop
- b. Arch
- c. Whorl**



- a. Loop
- b. Arch
- c. Whorl**

7. How can you classify this fingerprint?



- a. Loop
- b. Arch
- c. Whorl**

8. How can you classify this fingerprint?



- a. Loop**
- b. Arch
- c. Whorl

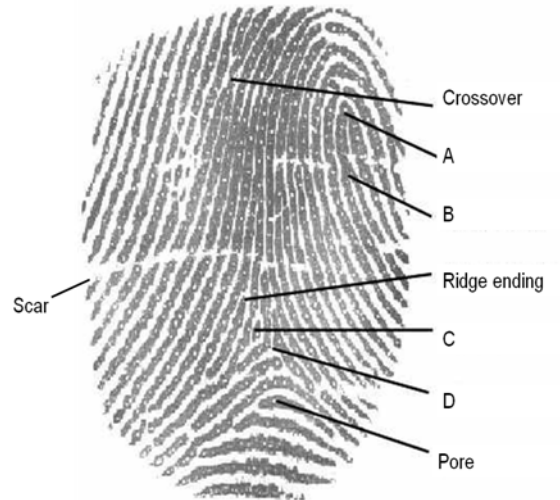
**Use the image to the right for numbers 9 and 10**

9. Which of the following letters is pointing to a bifurcation?

- a. A
- b. B**
- c. C
- d. D

10. Which of the following letters is pointing to a delta?

- a. A
- b. B
- c. C
- d. D**



**UNIT 6: Fibers**

1. Which statement correctly shows the size order from smallest to largest?

- a. Textile → Yarn → Fiber
- c. Fiber → Yarn → Textile**
- b. Textile → Fiber → Yarn
- d. Fiber → Textile → Yarn

2. How much time does it typically take for 95% of fiber evidence to fall off after a crime?

- b. 24 hours**
- a. 6 hours
- c. 2 days
- d. 1 week

3. During class, a student pulled a loose fiber from their shirt. That fiber fell to the ground and was later picked up on the pant leg of another student. This is an example of

- a. Direct transfer
- b. Secondary transfer**
- c. Tertiary transfer

4. Which pair correctly refers to the fibers that are woven into fabrics or textiles?

- a. The warp and the weft**
- b. The wasp and the weft
- c. The warp and the left
- d. The werp and the wift

5. Which is the most common animal fiber?

- a. Wool**
- b. Cotton
- c. Rayon
- d. Cashmere

6. Which is the most common textile plant fiber?

- a. Cotton**
- b. Coir
- c. Hemp
- d. Wool

7. Which is the most common type of synthetic fiber?

- a. Polyester
- b. Acetate
- d. Rayon**
- c. Acrylic

8. Because fibers are very small, they are referred to as

- a. Trace evidence**
- b. Class evidence
- c. Individual evidence
- d. Testimonial evidence

9. Burning fibers is an example of

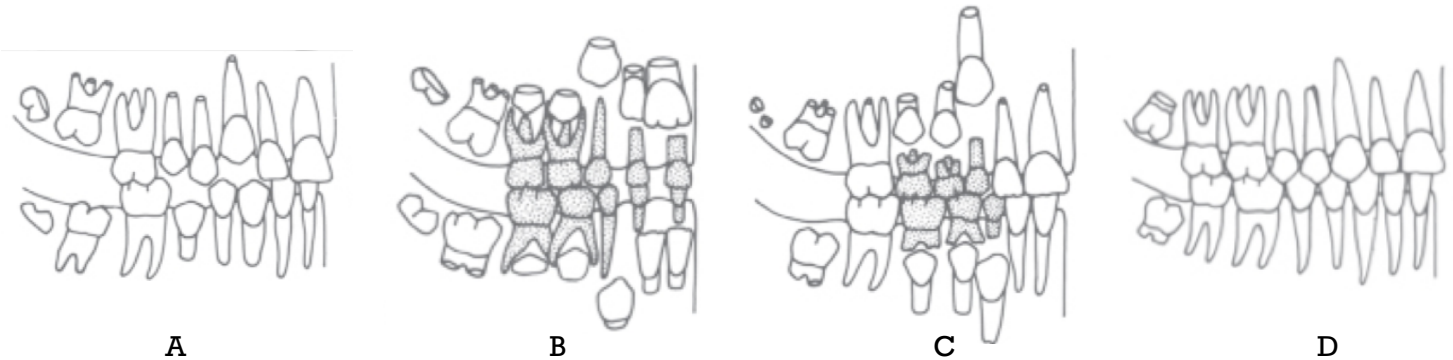
- a. Non-destructive analysis
- b. Destructive analysis**

10. \_\_\_\_\_ of fabrics are artificially produced.

- a. 45%
- b. 50%**
- c. 55%
- d. 60%

## UNIT 7: Impressions (Footprints, Bitemarks, Tire Tracks)

- A body was found in the rubble of a horrible factory fire. Forensic analysts were able to identify the victim by their teeth. The victim was found to have 22 teeth. Forensic analysis can conclude that the victim is most likely
  - It is impossible to determine the age
  - An adult
  - A child**
- Different tires have different treads. Which of the following is **INCORRECT** about the function of tire treads?
  - They are there for aesthetic reasons only (to make the tire pretty)**
  - Different vehicles have different treads depending on the function of the vehicle
  - The asymmetrical tread has better traction in wet and wintery weather
  - If the tire does not pass the Penny Test (the depth of the tread is 2/32" or less) the tire needs to be replaced.
- Billy accidentally spills an entire can of paint on the floor. He walked through the paint, then through the house looking for supplies to clean it up. These prints can be categorized as
  - Plastic prints
  - Visible prints**
  - Latent prints
  - Patent prints**
- A forensic analyst is examining a bite mark on a victim. They notice the area that was bitten is bruised and swollen. From this, the analyst can conclude that
  - The bite occurred postmortem
  - The bite occurred antemortem**
  - The bite was caused by an animal
  - The bite was caused by a human
- Looking at these four images, order the pictures in order from youngest to oldest.



- B → C → A → D
- C → B → D → A**
- D → A → C → B
- A → D → B → C

- Generally speaking, when comparing shoe size and height,
  - As height increases, shoe size increases**
  - As height increases, shoe size decrease
  - As height decreases, shoe size increases
  - There is no correlation between shoe size and height
- When recording tread impressions,
  - A print from the suspect's tire is created through half of a rotation
  - A print from the suspect's tire is created through one complete revolution**
  - Only the tread pattern is analyzed
  - Only the grooves across a tire are counted
- Which of the following is the correct order one should follow when collecting footwear impressions?
  - Pour the casting gel → place a scale → take a picture → Lift cast
  - Place a scale → pour the casting gel → lift cast → take a picture
  - Take a picture → place a scale → pour the casting gel → lift cast**
  - Place a scale → take a picture → pour the casting gel → lift cast
- Turning diameter is the space needed to turn the car in a complete circle. Which vehicle would have the largest turning diameter?
  - A motorcycle
  - A four-door sedan
  - An SUV
  - An 18-wheeler truck**

Name: \_\_\_\_\_ Per: \_\_\_\_\_ Date: \_\_\_\_\_

10. What allow a shoe print to become individual evidence instead of class evidence?

- a. **The wear patterns**
- b. The type of shoe
- c. The brand
- d. The color

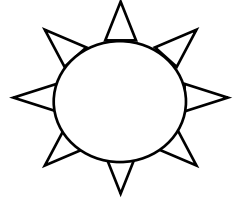
## UNIT 8: Firearms & Ballistics

1. Thousands of years ago, the \_\_\_\_\_ invented gunpowder.
  - a. **Chinese**
  - b. Greeks
  - c. Russians
  - d. Romans
2. The function of the hammer is to
  - a. Hit the bullet which ignites the gunpowder
  - b. **Hit the primer powder which ignites the gunpowder**
  - c. Hit the muzzle which ignites the gunpowder
  - d. Ignite the gunpowder directly
3. Slugs are
  - a. **Single projectiles fired from a shotgun**
  - b. Pellets fired from a shot bun
  - c. Bullets stored in a revolver
  - d. Found in the magazine
4. Which of the following statements correctly connects tires and bullets?
  - a. The tire's groove is the same as the bullet's ridge
  - b. The tire's groove is the same as the bullet's land
  - c. The tire's rib is the same as the bullet's groove
  - d. **The tire's rib is the same as the bullet's ridge**
5. Which type of equipment is used to trace a straight-line path to determine the position of the shooter?
  - a. **Lasers**
  - b. String
  - c. Paint
  - d. Another bullet
6. Which of the following is NOT an example a reference point?
  - a. Bullet holes in objects or victims
  - b. An entry point and exit point on a victim
  - c. **A note left behind at a possible scene**
  - d. Gunshot residue or spent cartridge casing
7. Which of the following is TRUE about bullets becoming lodged (stuck) in the body?
  - a. Larger caliber bullets tend to remain in the body
  - b. Small caliber bullets tend to pass through the body entirely
  - c. All bullets, regardless of size, tend to remain lodged in the body
  - d. **Small caliber bullets tend to remain in the body**
8. GSR is normally found
  - a. Near the exit wound
  - b. **Near the entrance wound**
  - c. Near both the exit and entrance wound
  - d. Neither near the exit or entrance wound
9. Which part of the gun can burn the skin if it comes in contact with it after being recently fired?
  - a. The barrel
  - b. The cartridge
  - c. **The muzzle**
  - d. The trigger
10. Which of the following is one of the markings examined on spent (used) cartridge casings?
  - a. Firing pin marks
  - b. Breechblock marks
  - c. Extractor/ejector marks
  - d. **All of the above**

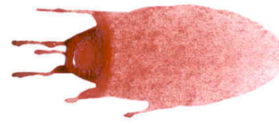
## UNIT 9: Blood (Inheritance, Types, Spatter)

1. Which of the following is the correct sequence of tests used to identify and analyze blood found at a crime scene?
  - a. Luminol → Kastle-Meyer → ELISA → Antibody
  - b. ELISA → Luminol → Antibody → Kastle-Meyer
  - c. Kastle-Meyer → Luminol → Antibody → ELISA
  - d. **Kastle-Meyer → Antibody → ELISA → Luminol**

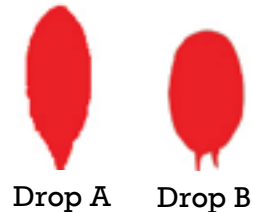
2. Which of the following blood types is known as the Universal Donor?  
 a. Type A  
**b. Type O**  
 c. Type AB  
 d. Type B
3. Which of the following genotype shows an individual heterozygous for Type B blood?  
**a.  $I^B i$**   
 b.  $I^B I^B$   
 c.  $I^A I^B$   
 d. ii
4. The picture below shows a red blood cell with antigens. What is the blood type of this individual?  
 a. Type A  
 b. Type B  
**c. Either Type A or Type B**  
 d. Type AB  
 e. Type O



5. Blood type evidence is considered to be  
 a. Class evidence because it can pinpoint a suspect  
**b. Class evidence because it can rule out a suspect**  
 c. Individual evidence because it can pinpoint a suspect  
 d. Individual evidence because it can rule out a suspect
6. Based on the picture below, what direction is the blood traveling?  
 a. From the left to the right  
**b. From the right to the left**  
 c. From the top to the bottom  
 d. From the bottom to the top

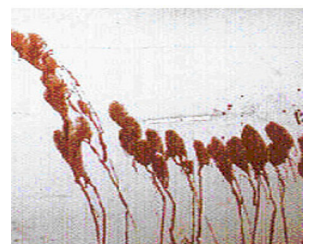


7. Which statement is true based on the images to the right?  
 a. The blood drops fell at the same angle  
 b. Blood drop A fell at a larger angle  
**c. Blood drop B fell at a larger angle**  
 d. It is impossible to determine with the information given



8. A mother has type A blood, and her child as type B blood. Which of the following men could NOT possible me the father?  
 a. The taxi driver – Type AB  
**b. The waiter – Type A**  
 c. The cable guy – Type B  
 d. It is impossible to tell
9. Which of the following is true about blood cells?  
 a. Birds, fish have circular, un-nucleated red blood cells  
 b. All mammals (except for camels and llamas) have oval blood cells with a nucleus  
**c. All mammals (except for camels and llamas) have circular, un-nucleated red blood cells**  
 d. All the red blood cells look the same

10. A blood spatter pattern with large drops that run downward due to their large volumes, like in the image to the right, it classified as a  
 a. Passive drop  
 b. Smear  
 c. Swipe  
**d. Arterial gush**



## UNIT 10: DNA (Structure & Analysis)

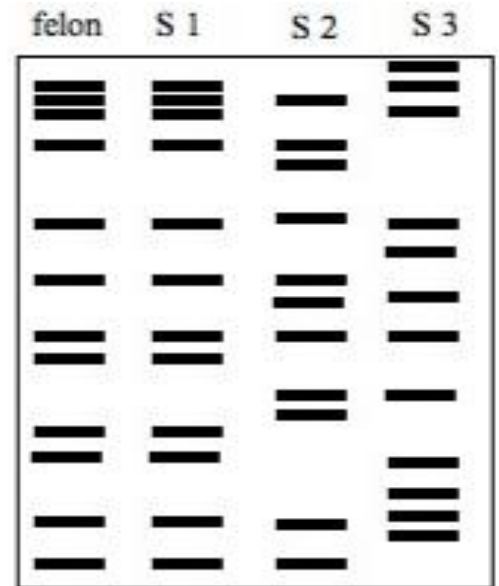
1. The shape of a DNA strand is often referred to as a  
 a. Semicircle  
 b. Tetrahedron  
**c. Double helix**  
 d. Parallelogram
2. Which of the following statements is true about gel electrophoresis?  
 a. Smaller fragments of DNA travel short distances because they get stuck  
 b. DNA is pulled to the negative side of the gel  
 c. Large fragments of DNA travel long distances  
**d. Small fragments of DNA travel long distances**
3. What is the proper order of events in the thermocycler?  
 a. Annealing → Denaturation → Extension  
 b. Extension → Annealing → Denaturation  
 c. Denaturation → Extension → Annealing

**d. Denaturation → Annealing → Extension**

4. Which of the following is the complementary strand of the DNA strand ACAGGACAT?  
 a. ACAGGACAT  
 b. TACAGGACA  
**c. TGTCTGTA**  
 d. ATGTCCTGT

5. Which of the following is the complementary strand of the DNA strand GGCATACG?  
 a. GCATACGG  
**b. CCGTATGC**  
 c. GGCATACG  
 d. CGTATGCC

6. Police were able to collect DNA samples left at the crime scene. Which of the following suspects match the DNA of the felon?  
 a. **Suspect 1**  
 b. Suspect 2  
 c. Suspect 3



~~7. How many times will the enzyme HindIII cut the following DNA Sequence?~~

~~DNA Sequence: GATTCAAAGCTTGTAAAGCTT~~

- ~~a. 1    b. 2    c. 3    d. 4~~

~~8. How many fragments will be produced which the following sequence is digested by HindIII?~~

~~DNA Sequence: GATTCAAAGCTTGTAAAGCTT~~

- ~~a. 1    b. 2    c. 3    d. 4~~

9. How many times will the enzyme HindIII cut the following DNA Sequence?

DNA Sequence: AAGAATTCCTTGTAAAGCTTACG

- a. 1**    b. 2    c. 3    d. 4

10. How many fragments will be produced which the following sequence is digested by HindIII?

DNA Sequence: AAGAATTCCTTGTAAAGCTTACG

- a. 1    **b. 2**    c. 3    d. 4

## UNIT 11: Drugs & Toxicology

1. Toothpaste is considered to be \_\_\_\_\_.  
**a. An intoxicant**    b. A poison
2. Arsenic is considered to be \_\_\_\_\_.  
 a. An intoxicant    **b. A poison**
3. Advil, a common pain reliever is considered to be \_\_\_\_\_.  
**a. An intoxicant**    b. A poison
4. Patient A drank a mysterious clear liquid and is losing their sight. They most likely drank \_\_\_\_\_.  
 a. Caustic poison    c. Sulfuric acid  
**b. Isopropyl/methyl alcohol**    d. Hydrochloric acid
5. Patient B is vomiting greenish-brown vomit. They most likely ingested \_\_\_\_\_.  
 a. Caustic poison    c. Sulfuric acid  
 b. Isopropyl/methyl alcohol    **d. Hydrochloric acid**
6. Patient C is having seizures and smells a burnt almond odor. They most likely ingested \_\_\_\_\_.  
**a. Cyanide**    c. Sulfuric acid  
 b. Carbon monoxide    d. Arsenic
7. The \_\_\_\_\_ is known as the toxin sponge.  
**a. Liver**    b. Vitreous humor

Name: \_\_\_\_\_ Per: \_\_\_\_\_ Date: \_\_\_\_\_

- c. Urine  
d. Blood
8. If a toxin is injected intramuscularly, the toxin most likely concentrates in the \_\_\_\_\_.  
a. Liver  
b. Lungs  
c. **Injection site**  
d. Bloodstream
9. Where should samples be collected from ?  
a. Where the chemicals enter  
b. Where the chemical concentrates  
c. Along the route of elimination  
d. **All of the above**
10. The rate at which alcohol absorbs depends on  
a. Body weight  
b. Stomach contents  
c. Location of ingestion  
d. **A and B only**  
e. All of the above

## UNIT 12: Autopsies & Human Remains

1. Which of the following is NOT a reason autopsies are conducted?  
a. To determine manner of death  
b. To determine cause of death  
c. To determine time of death  
d. **None of the above – all are reasons why autopsies are conducted**
2. Which of the following is an example of a manner of death that appears on a death certificate?  
a. Natural  
b. Accidental  
c. Suicidal  
d. **A, B, and C**
3. How do forensic detectives use time of death in their investigations?  
a. To include suspects based on their alibis  
b. To exclude suspects based on their alibis  
c. To include suspects based on their location at that time  
d. To exclude suspects based on their location at that time  
e. **All of the above**
4. Death color, or the pooling of blood in tissues after death is known as \_\_\_\_\_.  
a. **Livor mortis**  
b. Rigor mortis  
c. Algor mortis  
d. None of the above
5. Death stiffness, or stiffening of skeletal muscles after death \_\_\_\_\_.  
a. Livor mortis  
b. **Rigor mortis**  
c. Algor mortis  
d. None of the above
6. Death heat, or the cooling of body after death is known as \_\_\_\_\_.  
a. Livor mortis  
b. Rigor mortis  
c. **Algor mortis**  
d. None of the above
7. If a dead body was found and was still stiff, the body has been dead for \_\_\_\_\_.  
a. Less than 2 hours  
b. **Less than 36 hours**  
c. More than 36 hours  
d. It is impossible to determine
8. Which of the following is the correct order for the stages of decomposition?  
a. **Fresh → bloat → active decay → advanced decay → dry remains**  
b. Bloat → active decay → fresh → advanced decay → dry remains  
c. Fresh → active decay → bloat → advanced decay → dry remains  
d. Fresh → advanced decay → active decay → bloat → dry remains
9. Which of the following will decay faster?  
a. **A body in the heat**  
b. A body wearing clothes  
c. A body in the cold  
d. An elderly person
10. If a person died face down, where would the blood pool?  
a. On the victim's back side  
b. On the victim's left side  
c. On the victim's right side  
d. **On the victim's front side**



Name: \_\_\_\_\_ Per: \_\_\_\_\_ Date: \_\_\_\_\_