You may complete this review sheet for 5% extra credit toward your unit exam (not to exceed 100% on the exam). EVERYTHING must be written in your own handwriting; no exceptions.

Death Investigations Study Sheet

Note: This review sheet covers information we covered on death. Test your readiness for the death portion of this unit test by answering the questions below. Key vocabulary terms are shown in boldface print. Do not forget everything we've learned in Unit 1 and 2!

What is Death?

1. What is death? Discuss why it is impossible to determine the precise moment of death.
2. What is an **autopsy**? What are the general steps?
3. What is the difference between a medical examiner and a coroner?
4. Distinguish between cellular death and death of the organism
5. Distinguish among **manner, cause and mechanisms of death**.
6. Distinguish between 4 manners of death: **natural, accidental, and suicidal and homicidal**.
7. Explain the importance to forensics in determining the manner of someone's death.
8. What are the types of trauma?

Decomposition

9. Describe the process of cellular **autolysis** (auto = _____ and lysis = _____)
10. Name and describe the stages of decomposition of a corpse.
11. Recognize the stage of decomposition based upon:
    a. Odor
    b. Amount of decay
    c. Color of the flesh
    d. Amount of moisture in the flesh
    e. Build-up of gases
12. What factors affect decomposition rate?

Time of Death

13. Explain why determining the time of death is important to forensics.
14. Describe *at least* 4 ways to estimate the time of someone's death.
15. Explain how each would affect a TOD estimate of 10 hours based on body temperature only.
    a. hot weather
    b. cold weather
    c. being very thin
    d. being heavily clothed
    e. body stored in a freezer

Livor Mortis

16. Describe what happens to the body as **livor mortis** sets in. Include in your answer:
    a. Blood and blood vessels
    b. Circulation
    c. Decomposition
    d. Gravity
17. Explain when **lividity** first appears and how long after death it is fixed.
18. Explain how it is possible to determine someone's body position when they died if a body was moved after death by examining the body for evidence of lividity.
19. Be able to estimate the time of death using information about lividity.

Rigor Mortis

20. Define **rigor mortis**.
21. Explain the progression of rigor mortis from when it first sets in to when it fades.
22. Compare and contrast the shape and length of muscles when they are contracted versus when they are relaxed.
23. Describe what happens to the muscles after someone dies.
24. Explain why rigor mortis eventually fades.
25. Be able to estimate the approximate time of death using rigor mortis evidence.

Algor Mortis

26. Define **algor mortis**.
27. State the formula used to estimate the loss of body temperature after:
    a. the first 12 hours after death
    b. after 24 hours after death
28. Explain how body temperature is taken from a corpse
29. Describe the effect of each of the variables on loss of body temperature:
    a. Ambient temperature
    b. Presence or absence of clothing
30. Be able to estimate the time of death based on the loss of body temperature

Other Methods to Determine Time of Death

31. Discuss why someone's stomach contents is emptied and examined during **autopsy**.

32. Explain why knowing the degree of digestion of a deceased person could be useful in estimating time of death

33. Describe changes in the eyes following death. Include in your answer:

    a. Cloudiness of the **cornea**

    b. Amount of Potassium in the Vitreous Humor of the eye

Forensic Entomology

34. Define **forensic entomology.**

35. Explain why insects are attracted to a dead body.

36. Explain why **blowflies** are typically the first insects to lays eggs on a recently deceased organism.

37. How do blowflies and other insects get into the body?

38. Provide an explanation why insects collected at a crime scene need to be immediately preserved.

39. Discuss the proper collection of insects at a crime scene.

40. Explain how insect presence may be detected without actually finding the live insect.

41. Why is it necessary to collect weather information for the area around the body?

42. Explain why a crime scene investigator needs to provide very specific information regarding the temperature, amount of moisture present at the time when insects are found on a decomposing body.

43. Explain how the following factors may help solve a crime in which insect evidence was collected:

    a. Amount of moisture

    b. Amount of light

    c. On what part of the body was the insect evidence found

    d. Season of the year in which the insect was collected.

    e. Body location:

    f. Country, state and town

    g. Inside or outside

    h. Covered or exposed to elements

    i. Presence or absence of clothing on the body.

44. Given an insect's life cycle, be able to determine how long a body had been dead based upon the presence or absence of one or several different types of insects.

45. Identify the different stages of blowfly development.

46. Distinguish between the three different instars of blowfly **larva** based on:

a. Size

b. Number of **spiracular slits**

47. Describe the type of research that is being conducted at the Body Farm in Tenn.

48. Explain the importance of a medical examiner collecting insect evidence as well as body, soil and air temperatures when trying to approximate the time of death.

49. Define the following terms: **egg, larva, pupa, instar**

50. Explain how to estimate the time of death of a person using insect evidence

Anthropology

51. What is **forensic anthropology**?

52. What can forensic anthropology determine about a victim from the bones?

53. How are animal bones different from human bones?

54. How would the age of victims have been estimated?

55. How is height estimated?

56. Which bones best indicate gender?

57. What are the 3 ancestry classes of bone identification?

58. How is odontology used in identification?

59. Briefly explain how a forensic anthropologist may reconstruct a face on a skull.

General Information

60. Discuss how time of death is an estimate that should be based on multiple factors not just one type of evidence.

61. Given insect evidence, data pertaining to *rigor*, *algor* and *livor mortis* and data from the autopsy, be able to estimate the time of death.

62. Discuss how anthropologist determine the gender, ancestry, height, and age of a person using their bones.

63. A woman was found at 6am with a liver temperature of 65 degrees F. Rigor was absent and livor mortis was permanent. The environmental temperature was 65 degrees F. Estimate TOD

64. A man was found at 8pm with a liver temperature of 82 degrees F. Environmental temperature was 72 degrees F. Rigor and lividity were evident. Estimate TOD.