

Lab Practical 2 Answer Key  
Wednesday Section

1. When you blew through a straw, what gas did you release?

**Carbon Dioxide**

2. What does phenol red test for?

**The presence of an acid**

3. Fill in the blank for photosynthesis:

**6CO<sub>2</sub> or CO<sub>2</sub>**

4. Where in the cell does photosynthesis take place?

**Chloroplasts**

5. Fill in the blank for cell respiration, molecular formula and name:

**Glucose, C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>**

6. What molecule is reduced in cell respiration?

**Oxygen**

7. If you can control your own body temperature, you are known as an

**Endotherm**

8. Which is endothermic, a mouse or a lizard?

**Mouse**

9. Looking at the chromosomes in front of you, what is the sex of A?

**Male**

10. Looking at the chromosomes in front of you, what event is happening?

**Crossing over**

11. How many chromosomes are in a human gamete?

**23**

12. During S phase, chromosomes duplicate. What do we call the structures that line up in the middle of the cell during metaphase of mitosis, before they separate from one another?

## **Sister chromatids**

13. Did this cell go through mitosis or meiosis?

**Meiosis**

14. What is the ploidy of a zygote, the result of a sperm fertilizing an egg?

**2n, diploid**

Extra Credit: Which of the bird beaks was most effective at picking up cat food?

**Spoons**

Extra Credit: Are males or females more susceptible to color blindness?

**Males**

15. What stage of mitosis is represented by this model?

**Metaphase**

16. What stage of mitosis is represented by this model?

**Anaphase**

17. What stage of mitosis is represented by this model?

**Prophase**

18. What stage of mitosis is represented by this model?

**Telophase**

19. Transcribe this DNA sequence into mRNA: CCCTATGGA

**GGGAUACCU**

20. What is the sequence of anti-codons that would bind to the mRNA sequence you produced above?

**CCCUAUGGA**

21. Using the genetic dictionary in front of you, translate this mRNA sequence into amino acids:

CUUGGGUGU

**Leucine, Glycine, Cysteine**

22. Why are there multiple codons for the same amino acid (the “redundancy of the genetic code?”)

**Because when mutations arise, there will be a safeguard to ensure that the same amino acid gets made.**

23. What are 2 differences between DNA and RNA?

**DNA is double stranded, RNA is single-stranded. DNA has the nitrogenous base thymine, while RNA has uracil.**

24. Name 2 kinds of mutations that can occur in DNA

**Frame shift mutation and point mutation**

Extra Credit: What are Laney College’s colors?

**Green and white or silver**

Extra Credit: Who is scheduled to be Laney College’s commencement speaker?

**Janet Napolitano**

25. In the natural selection experiment with birds’ beaks, we graphed the % of the overall population represented by each bird beak phenotype against time. Which variable went on the x-axis?

**Time**

26. Which variable went on the y-axis?

**Percent of the overall population.**

27. Can a protein be considered a phenotype?

**Yes**

28. Is having 5 fingers a dominant or recessive trait?

**Recessive**

29. If both phenotypes are expressed in the heterozygous condition, it is referred to as

**Co-dominance**

30. If the phenotype is intermediate between the dominant and recessive conditions, it is referred to as

**Incomplete dominance**

31. Looking at the Punnett Square, we would refer to genotype A as  
**Homozygous dominant**

32. When a cell has 2 sets of chromosomes, it is called  
**Diploid**

33. Hemophilia is an x-linked trait; what does it mean to be x-linked?  
**Located on the x-chromosome**

34. True/False: Males can pass an x-linked trait on to their sons.  
**False**

35. Hemophilia is an x-linked trait. What are the possible genotypes for a female?  
 **$X^H X^H$   $X^H X^h$   $X^h X^h$**

36. True/False: Plants make ATP by cell respiration  
**True**

37. True/False: Plants have mitochondria  
**True**