1. The central dogma of molecular biology tells us that information is passed from

- ○ DNA to methylation to RNA to protein
- ◉ DNA to RNA to protein
- ○ RNA to DNA to protein
- ○ DNA to epigenetics to protein

2. Which of the following is one of the major drivers of the sequencing revolution that began after 2008?

- ◉ Decreased cost of sequencing
- ○ Sequencing for precision medicine
- ○ Decreased computational analysis time
- ○ Easier access to proteomic data

3. Which of the following is an exclusive characteristic of genomics compared to traditional biology?

- (●) Studies considering the entire genome
- ( ) Low throughput experiments
- ( ) Targeted studies of one or a few genes
- ( ) Clever experimental design

4. Genomic data science involves techniques from which of these disciplines?

- (●) All of the these options
- ( ) Molecular Biology
- ( ) Computer Science
- ( ) Statistics

5. Which of the following is an activity that genomic data scientists do not perform?

- (●) Sample collection
- ( ) Population genomics
- ( ) Experimental design
- ( ) Integrative genomics

6. Which of these is not one of the DNA nucleic acids?

- (●) Alanine
- ( ) Adenine
- ( ) Cytosine
- ( ) Thymine

7. Transcription is a process that converts DNA to

- (●) RNA
- ( ) polymerases
- ( ) Any other molecule
- ( ) genes

8. The cost to sequence a human genome today, in U.S. dollars, is approximately

- ( ) None of these options
- ( ) $30 million
- ( ) $20,000
- (●) $1000

9. DNA encodes instructions for

- (●) Producing all the proteins that a person requires for life
- ( ) Helping us digest food
- ( ) Enveloping viruses that infect a cell
- ( ) Regulating body temperature

10. One major difference between humans and bacteria is

- (●) Human cells have a nucleus, and bacterial cells do not.
- ( ) The human genome is made of DNA, while bacteria are made of RNA.
- ( ) Human genes are first transcribed to RNA, while bacterial genes are not.
- ( ) Human proteins are made of combinations of 20 amino acids, while bacterial proteins use a smaller set of 12 amino acids.