1. Genome assembly refers to

- ○ The process whereby a cell copies its DNA
- ○ A computational process to translate highlevel code into machinelevel instructions
- ○ A computational method to identify the genes being expressed in a cell or tissue
- ◉ A computational method for reconstructing chromosomes from short reads

2. Which of the following is not true about DNA?

- ○ DNA molecules can be millions of bases in length
- ◉ It doesn't matter which direction you write the sequence in
- ○ Each strand has a direction
- ○ It is a doublestranded molecule

3. RNA molecules are translated into

- ○ Introns
- ○ Modified RNA molecules
- ○ DNA molecules
- ◉ Proteins

4. Messenger RNA is

- ◉ A template from which proteins are constructed by ribosomes
- ○ A special signal that helps a cell communicate with other cells
- ○ A reverse copy of DNA
- ○ The genetic material inherited by offspring

5. DNA is copied into DNA in order to

- ○ Respond to an infection
- ○ Create species diversity
- ◉ Replicate a cell
- ○ Fix errors in the DNA sequence

6. Evolutionary biology involves the study of

- ◉ The process of natural selection that allows some DNA mutations to survive and cause others to die out
- ○ How the cell membrane is formed
- ○ The process through which RNA is exported from the nucleus
- ○ The origin of the very first living organisms

7. Which of the following can we measure with next generation sequencing?

- ◉ DNA-protein binding
- ○ Cell structure
- ○ Protein levels
- ○ RNA secondary structure

8. What is the first step in ChIP-sequencing to measure protein-DNA binding?

- ○ Fragmenting the DNA
- ○ Sequencing the bound DNA fragments
- ○ Antibody pulldown of the linked proteinDNA fragments
- ◉ Cross-linking proteins to the DNA

9. Which of the following can be measured using bisulfite conversion and then sequencing?

- ○ DNA variants
- ◉ DNA methylation
- ○ RNA abundances
- ○ Transcription-factor binding

10. What is the primary measurement technology used in most modern genomics experiments?

- ○ Oligonucleotide arrays
- ○ Sanger sequencing
- ○ Nanopore sequencing
- ○ Polymerase chain reaction
- ◉ Next generation sequencing
- ○ Western blotting