

Example questions:

1. When all chromosomes line up at the spindle equator, it is referred as the stage(s) of:
 - A) Prophase
 - B) Metaphase
 - C) Anaphase I
 - D) Anaphase II
 - E) Telophase

2. What part of the neuron contains the nucleus and other organelles:
 - A) The cell body
 - B) The axon terminal
 - C) The dendrites
 - D) The axon
 - E) The synapse

3. Which of the following is a primary function of bone marrow:
 - A) protection
 - B) mineral storage
 - C) blood cell production
 - D) movement
 - E) detoxification

4. Mitochondrial DNA(mtDNA):
 - A) is inherited solely from the mother
 - B) is inherited solely from the father
 - C) is inherited from both parents
 - D) is linear rather than circular
 - E) is not smaller than nuclear DNA

5. 10 nF is equal to:
 - A) 10^{-5} F
 - B) 10^{-6} F
 - C) 10^{-7} F
 - D) 10^{-8} F
 - E) 10^{-9} F

6. A river flows at a speed of 1 km/h and a man swims upstream at a speed of 2 km/h. The actual speed of the swimmer with respect to river bank is:
 - A) 1 km/h, upstream
 - B) 1 km/h, downstream
 - C) 2 km/h, upstream
 - D) 3 km/h, downstream
 - E) 3 km/h, upstream

7. Two equal electric charges in air are a certain distance apart. If the distance is doubled, the force between the charges is:
 - A) two times larger
 - B) four times larger
 - C) two times smaller
 - D) four times smaller
 - E) equal to zero

8. A wheel rotates at 30 RPM (revolutions per minute). The frequency of rotation is equal to:
- A) 50 Hz
 - B) 30 Hz
 - C) 5 Hz
 - D) 3 Hz
 - E) 0.5 Hz
9. What is the energy of an electron accelerated by a voltage of 500 V?
($e = 1.6 \cdot 10^{-19} \text{C}$)
- A) 500 V
 - B) 500 eV
 - C) 1.6 eV
 - D) 800 eV
 - E) $8 \cdot 10^{-17} \text{ eV}$
10. What is correct for calcium, ${}_{20}\text{Ca}$?
- A) It is an element of the second period.
 - B) It is an element of the fourth group.
 - C) It has the following configuration: $1s^2 2s^2 2p^6 3s^2 3p^4 4s^2$.
 - D) It has high electronegativity.
 - E) It gives acid with water.
11. NH_4^+ ion is:
- A) an acid
 - B) a base
 - C) an ampholyte
 - D) an electron donor
 - E) a proton acceptor
12. Cyclohexane is:
- A) a saturated phenol
 - B) a purine base
 - C) an unsaturated hydrocarbon
 - D) a saturated hydrocarbon
 - E) an integral part of polysaccharides
13. Aldehydes:
- A) are obtained by oxidation of secondary alcohols
 - B) are resistant to common oxidative reagents
 - C) contain a carboxylic group
 - D) contain a carbonyl group
 - E) are nonpolar