

Cell Metabolism MCQs

1. Which of the following is the primary energy currency of the cell?
 - a) NADH
 - b) ATP (*)
 - c) FADH₂
 - d) GTP

2. Which of the following processes is **anaerobic**?
 - a) Glycolysis (*)
 - b) Krebs cycle
 - c) Electron transport chain
 - d) Oxidative phosphorylation

Cell Division MCQs

3. A cell with a diploid chromosome number of 46 undergoes meiosis. How many chromosomes will each resulting gamete have?
 - a) 92
 - b) 46
 - c) 23 (*)
 - d) 12

Cell Cycle MCQs

4. DNA replication occurs during which phase of the cell cycle?
- a) G1 phase
 - b) S phase (*)
 - c) G2 phase
 - d) M phase

Cell Division – Advanced MCQs

5. **In which phase of meiosis do homologous chromosomes undergo crossing over?**
- a) Prophase I (*)
 - b) Metaphase I
 - c) Anaphase I
 - d) Telophase I
6. **What is the function of kinetochore in cell division?**
- a) DNA replication
 - b) Attachment of spindle fibers to chromosomes (*)
 - c) Formation of the nuclear membrane
 - d) Synthesis of ATP

Cell Cycle – Advanced MCQs

7. **Which checkpoint ensures that all chromosomes are properly attached to spindle fibers before anaphase?**
- a) G1 checkpoint
 - b) G2 checkpoint
 - c) M checkpoint (*)
 - d) S checkpoint

2.1 DNA: The Genome – Basic MCQs

8. What is the primary function of histones?

- a) DNA replication
- b) DNA packaging (*)
- c) Protein synthesis
- d) Transcription

2.3 DNA, RNA, and Proteins – Advanced MCQs

9. Which molecule is responsible for bringing amino acids to the ribosome?

- a) mRNA
- b) tRNA (*)
- c) rRNA
- d) miRNA

2.4 DNA Technology – Basic MCQs

10. What is the purpose of PCR (Polymerase Chain Reaction)?

- a) DNA sequencing
- b) DNA amplification (*)
- c) Protein synthesis
- d) RNA synthesis

11. Pellagra is caused by the deficiency of which vitamin?

- a) Vitamin B1 (Thiamine)
- b) Vitamin B3 (Niacin) (*)
- c) Vitamin B6 (Pyridoxine)
- d) Vitamin B12 (Cobalamin)

5.1 Human Body Homeostasis – MCQs

12. Homeostasis refers to the body's ability to:

- a) Maintain internal environment (*)
- b) Fight infections
- c) Generate energy
- d) Grow and develop

5.2 Integumentary, Skeletal, and Muscular Systems – MCQs

13. Which type of muscle is involuntary and found in the walls of internal organs?

- a) Skeletal muscle
- b) Smooth muscle (*)
- c) Cardiac muscle
- d) Striated muscle

14. The major mineral stored in bones is:

- a) Potassium
- b) Sodium
- c) Calcium (*)
- d) Iron