

## Quiz 1: Introduction to Biology

Monsoon 2025

Total marks: 15

Duration: 30 min

1. How do mitochondria provide evidence for endosymbiotic theory? [1 mark]
2. A secreted protein is made in the cell by ribosomes. Trace its journey through the organelle system from synthesis to release outside the cell. [3 marks]
3. What are the three domains of life? How are they further classified? [2 marks]
4. What controls the shape and movement of eukaryotic cells? [1 mark]
5. Why do phospholipids spontaneously form bilayers in water? [1 mark]
6. Why do unsaturated fatty acids make membranes more fluid compared to saturated ones? [1 mark]
7. What is a nucleosome? [1 mark]
8. State Chargaff's rule [1 mark]
9. Only part of glucose's energy is captured in ATP, and the rest is released as heat. Why is this loss necessary for life to continue? [2 marks]
10. When predicting gene function in a new genome, why are orthologs often more reliable references than paralogs? [2 marks]