

2025 Bi H1 Q1

Section: DNA and the Genome

Topic: Structure of DNA

Question Summary:

Which row correctly shows how DNA is organised in a nucleus, a chloroplast and a mitochondrion?

Worked Solution:

- In eukaryotic cells, **nuclear DNA** is arranged as **linear chromosomes**.
- Both **chloroplasts** and **mitochondria** contain **circular DNA**, similar to bacterial chromosomes.
- Therefore the only correct combination is:

Nucleus → linear chromosome

Chloroplast → circular chromosome

Mitochondrion → circular chromosome

Final Answer: D

Revision Tips:

- Nuclear DNA is linear and tightly packaged with proteins.
- Mitochondria and chloroplasts have circular DNA because of their evolutionary origin from bacteria (endosymbiosis).
- Multiple-choice questions of this type often test recall of organelle structures.