

Diagram Practice Sheet

Draw each diagram from memory in the box, then check against NCERT and tick off every label you got right.
Aim for three clean attempts before the pre-boards.

1. DNA double helix

Must label: 5' and 3' ends on both strands; sugar-phosphate backbone; base pairs A-T, G-C; 0.34 nm; 3.4 nm pitch

Attempt 1 ☐

Attempt 2 ☐

Attempt 3 ☐

2. Nucleosome

Must label: Histone octamer; DNA wrapped around; linker DNA; H1 histone

Attempt 1 ☐

Attempt 2 ☐

Attempt 3 ☐

3. Replication fork

Must label: Origin; leading strand; lagging strand; Okazaki fragments; DNA polymerase; DNA ligase; 5'/3' polarity

Attempt 1 ☐

Attempt 2 ☐

Attempt 3 ☐

4. Transcription unit

Must label: Promoter; structural gene; terminator; template strand (3'→5'); coding strand

Attempt 1 ☐

Attempt 2 ☐

Attempt 3 ☐

5. tRNA (clover leaf)

Must label: Anticodon loop; amino acid acceptor end; 5' and 3' ends

Attempt 1 ☐

Attempt 2 ☐

Attempt 3 ☐

6. Lac operon — OFF and ON

Must label: i gene; repressor; operator; promoter; z, y, a; inducer (lactose) binding repressor

Attempt 1 ☐

Attempt 2 ☐

Attempt 3 ☐

7. DNA fingerprinting steps

Must label: Restriction digest; gel electrophoresis; Southern blot; probe; autoradiogram bands

Attempt 1 ☐

Attempt 2 ☐

Attempt 3 ☐