1. DNA vs RNA – never mix them up

**Trick:**

DNA = Deoxy + Double + Thymine
RNA = Ribose + Single + Uracil

**Tip:**

If asked for "differences", write 3 clear points only (sugar, strands, base)

2. Chargaff's Rule

**Trick:**

A = T, G = C
Purines = Pyrimidines

**Common Question Trap:**

They may give % of A and ask G/C — solve stepwise, do not jump steps

3. DNA Replication

**Trick :**

Unwind → Primer → Elongation → Okazaki → Ligase

**Enzyme order (must be correct):**

Helicase → Primase → DNA polymerase III → DNA polymerase I → Ligase
Write in steps with headings

4. Transcription vs Translation

**Trick:**

Transcription = DNA → RNA (nucleus)
Translation = mRNA → Protein (ribosome)

**Tip:**

Always mention location of the process.

5. Genetic Code

**Tricks to remember:**

- AUG = Start + Methionine
- UAA, UAG, UGA = STOP
- Code is degenerate but unambiguous

**Tip :**

Never write "one codon codes for many amino acids"

6. Lac Operon

**Trick:** Remember the order

Promoter → Operator → $\beta$-gal → Permease → Transacetylase

**Important point:**

"Lac operon is an inducible operon in *E. coli*."

## GENERAL TIPS

**Use Keywords**

- Semi-conservative
- Antiparallel

- Template strand
- Degenerate code
- Inducer (not activator for lac operon)

**Diagrams**
- DNA replication fork
- Lac operon

## Label the diagrams correctly and neatly

# COMMON ERRORS

1. **Wrong enzyme names**
   - DNA polymerase never initiates synthesis
   - Helicase does not add nucleotides

2. Mixing up strands
   - Template strand ≠ Coding strand
   - mRNA is complementary to template, not coding

3. **Lac operon confusion**
   - Repressor binds operator, not promoter
   - Lactose is inducer, not substrate

4. **Forgetting base pairing during replication**

**Always write:**
A–T, G–C (hydrogen bonds)

5. Revise NCERT diagrams minutely

6. Practice numericals on base composition

7. Learn definitions word-to-word

8. Attempt case-based questions slowly and carefully.