EngineeringRise

Nucleic acids and hormones

Formulas and units, JEE Main. Status: Reviewed on 2026-11-20.

Result	Formula	Units or note
DNA bases	A, G, C, T; sugar 2-deoxyribose	n/a (names)
RNA bases	A, G, C, U; sugar ribose	n/a (names)
Nucleotide	phosphate + sugar + base; nucleoside has no phosphate	n/a (composition)
Base pairing	A=T (2 H bonds); G=C (3 H bonds) Valid when: Watson-Crick pairing in double-stranded DNA	hydrogen bonds per pair
Composition, double strand	A = T, G = C, A + G = 50 percent Valid when: double-stranded DNA only (Chargaff rule)	percent
Hydrogen bonds	(2 + f) N for N base pairs, G + C fraction f Valid when: double-stranded DNA with N base pairs; f = G+C fraction of pairs	count
Phosphodiester bonds	single strand of n: n - 1; double strand of N bp: 2(N - 1) Valid when: linear (non-circular) strand or duplex	count
Hydrolysis products	DNA: H3PO4, deoxyribose, A, G, C, T; RNA: H3PO4, ribose, A, G, C, U Valid when: complete hydrolysis of DNA or RNA	n/a (names)
Insulin / thyroxine / testosterone	polypeptide / amino-acid derivative / steroid	n/a (class)

Full lesson with worked examples:
https://www.engineeringrise.in/learn/learn/jee-main/chemistry/biomolecules/nucleic-acids-and-hormones

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