

# COMEDK UGET 2026

Quick Revision Formula Sheet | Engineering Entrance Excellence

**Last-Minute Tip:** Since there is **no negative marking** in COMEDK 2026, ensure you attempt all 180 questions. Use these formulas to eliminate options quickly!

## 1. MATHEMATICS

### Calculus & Functions

- **Integration by Parts:**  $\int u v dx = u \int v dx - \int [u' (\int v dx)] dx$
- **Leibniz Rule:**  $d/dx [\int_{\psi(x)}^{\phi(x)} f(t) dt] = f(\phi(x))\phi'(x) - f(\psi(x))\psi'(x)$
- **Limits:**  $\lim_{x \rightarrow 0} (\sin x / x) = 1$ ;  $\lim_{x \rightarrow 0} (e^x - 1)/x = 1$

### Coordinate Geometry & Vectors

- **Distance between skew lines:**  $d = | (a_2 - a_1) \cdot (b_1 \times b_2) | / | b_1 \times b_2 |$
- **Conics:** For  $y^2 = 4ax$ , Tangent at  $(x_1, y_1)$  is  $yy_1 = 2a(x + x_1)$
- **Vector Projection:** Projection of  $a$  on  $b = (a \cdot b) / |b|$

## 2. PHYSICS

### Electrostatics & Magnetism

- **Electric Field (Point Charge):**  $E = kQ / r^2$
- **Capacitance (Parallel Plate):**  $C = \epsilon_0 A / d$
- **Biot-Savart Law:**  $dB = (\mu_0 / 4\pi) (I dl \sin\theta / r^2)$
- **Force on moving charge:**  $F = q(v \times B)$

### Modern Physics & Optics

- **Einstein's Photoelectric Eq:**  $K_{max} = h\nu - \Phi$
- **De-Broglie Wavelength:**  $\lambda = h / p = h / \sqrt{2mK}$

- **Lens Maker's Formula:**  $1/f = (\mu - 1) [ 1/R_1 - 1/R_2 ]$
- **Mirror Formula:**  $1/v + 1/u = 1/f$

### 3. CHEMISTRY

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#### Physical Chemistry

- **Chemical Kinetics (1st Order):**  $k = (2.303 / t) \log( [A_0] / [A] ); t_{1/2} = 0.693 / k$
- **Raoult's Law:**  $(P^\circ - P_s) / P^\circ = X_{solute}$
- **Nernst Equation:**  $E_{cell} = E^\circ_{cell} - (0.0591 / n) \log Q$  (at 298K)

#### Important Constants

Constant	Value
Planck's Constant (h)	$6.626 \times 10^{-34} \text{ J}\cdot\text{s}$
Gas Constant (R)	$8.314 \text{ J/mol}\cdot\text{K}$ or $0.0821 \text{ L}\cdot\text{atm/mol}\cdot\text{K}$
Avogadro's Number ( $N_a$ )	$6.022 \times 10^{23} \text{ mol}^{-1}$

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