

## AFCAT Syllabus & Exam Pattern

The AFCAT exam consists of two papers and both are of the objective type:

- 1. AFCAT - For Flying & Ground Duty Branch (Non- Tech)
- 2. EKT - For Ground Duty (Technical Branch)

Here is the list of Subjects that one need to prepare:

<i>Exam</i>	<i>Subject</i>	<i>Duration</i>	<i>No. of Question</i>	<i>Maximum Marks</i>
<b>AFCAT(For all branches)</b>	Numerical Ability, Reasoning, English, General Awareness & Military Aptitude	120 Minutes	100	300
<b>EKT (For Technical Branch Only)</b>	Mechanical, Computer Science, Electrical, Electronics & Communication	45 Minutes	60	180

### AFCAT Syllabus

<i>Subject</i>	<i>Syllabus</i>
English	<ul style="list-style-type: none"><li>• Error Detection</li><li>• Reading Comprehension</li><li>• Sentence Completion</li><li>• Synonym/Antonym</li><li>• Vocabulary</li><li>• Idioms &amp; Phrases</li></ul>
General Awareness	<ul style="list-style-type: none"><li>• History</li><li>• Geography</li><li>• Political Science</li><li>• General Science</li><li>• Environment</li><li>• Defence</li><li>• Art &amp; Culture</li><li>• Current Affairs</li><li>• Sports</li></ul>
Numerical Ability	<ul style="list-style-type: none"><li>• Decimal</li><li>• Fractions</li><li>• Time &amp; Work</li><li>• Average</li><li>• Profit &amp; Loss</li><li>• Percentage</li></ul>

	<ul style="list-style-type: none"><li>• Ratio &amp; Proportion</li><li>• Simple Interest</li><li>• Speed, Time &amp; Distance</li></ul>
Reasoning & Military Aptitude	<ul style="list-style-type: none"><li>• Verbal Skills</li><li>• Spatial Ability</li></ul>

### Marking Scheme & Standard of AFCAT:

- For every correct answer, the candidate will be awarded 3 marks
- For every incorrect answer, 1 mark will be deducted.
- There will be no negative marking for unattempted questions.

The Standard of questions of Numerical ability will equivalent to matriculation level. The standard of questions in other subjects will be of graduation level.

### AFCAT EKT Syllabus 2022:

The candidates who wish to appear for Ground Duty Technical Branch need to appear for EKT (Engineering Knowledge Test).

Some topics are common for every branch, which includes Engineering Mathematics, Engineering Drawing & Physics.

#### The Detailed syllabus is shown below:

**Engineering Mathematics:** Matrix Algebra, Eigenvalues and Eigenvectors, Theorems of integral calculus, Partial derivatives, Maxima and minima, Multiple integrals, Stokes, Gauss and Green's theorems. The first-order differential equation (linear and nonlinear), Cauchy's and Euler's equations, Complex variables, Taylor's and Laurent' series, Sampling theorems, Mean, Median, Mode, and Standard deviation, Random variables, Discrete and Continuous Distributions, Fourier transform, Laplace transform, Z-transform.

Also, you can go through the [Important AFCAT Maths Shortcuts Formulas and Tricks by Experts](#) to score better in the exam.

**Engineering Physics:** Description of Motion in One, Two and Three Dimensions, Units for measurement, Work, Energy and Power, Rotational Motion, Gravitation, Electrostatics, Electric Current, Heat and Thermodynamics, Magnetic Effect of Currents, Electromagnetic Induction and Alternating Currents and Electromagnetic Waves, Magnetism, Ray Optics, and Optical Instruments, Laws of Motion

**Engineering Drawing:** Introduction to Computer-Aided Drafting, Projection of straight line, planes and solids, Isometric Projection, Sectional Views of solids, Full section, Intersection of surfaces.

The syllabus of EKT for each branch is given below:

<i>Branch</i>	<i>Subject</i>
Computer Science Engineering	<ul style="list-style-type: none"><li>• Analog and Digital Electronics</li><li>• Electronic Devices</li><li>• Computer Networks</li><li>• Network Theory Design</li><li>• Switching Theory</li><li>• Information Technology</li><li>• Electrical Engineering</li><li>• Control Engineering</li><li>• Telecommunication Systems</li><li>• Microwave Engineering</li><li>• Antenna and Wave Propagation</li><li>• Radar Theory</li><li>• Instrumentation</li></ul>
Electronic Engineering	<ul style="list-style-type: none"><li>• Analog and Digital Electronics</li><li>• Electrical Engineering</li><li>• Electronic Devices</li><li>• Control Engineering</li><li>• Telecommunication Systems</li><li>• Microwave Engineering</li><li>• Antenna and Wave Propagation</li><li>• Instrumentation</li><li>• Computer Networks</li><li>• Network Theory Design</li><li>• Switching Theory</li><li>• Information Technology</li></ul>
Mechanical Engineering	<ul style="list-style-type: none"><li>• Engineering Mechanics</li><li>• Thermodynamics</li><li>• Aircraft Structures</li><li>• Theory of Machines,</li><li>• Fluid mechanics/Hydraulic Machines</li><li>• Manufacturing Science</li><li>• Materials Science</li><li>• Automotive Engineering</li><li>• Power Plant Engineering</li><li>• Industrial Engineering</li><li>• Flight Mechanics</li><li>• Aerodynamics</li></ul>