

## Structure of the admission test

The test will have two sections. The first section is mandatory for all applicants. It will test their general aptitude, basic analytical skills, understanding of academic integrity and ethical practices in research, and statistical literacy.

### **Syllabus for the first section:**

**Numerical abilities:** Grade 10 mathematics as per CBSE/ICSE/International school boards

**Academic integrity and research ethics:** What is academic integrity and why is it required? What is plagiarism (including self plagiarism)? Citing, summarizing, paraphrasing and quoting others' work. <https://usingsources.fas.harvard.edu/>

**Responsible conduct of research:** For any epidemiological /intervention based / investigative / observational studies involving humans: <http://www.who.int/ethics/research/en/>  
For animal research: <https://www.aaalac.org/accreditation/RefResources/IGP2012.pdf>

**Statistics:** Empirical methods in science, constructs and their operationalization into variables, continuous and discontinuous variables, scales, reliability and validity, frequencies, distributions, central tendencies: Mean, Median, Mode, Measures of dispersion, Graphical representation of data: Bar graph, line graph, Pie-Chart, Tabulation, Box plots, Scatter plots etc; Correlation and covariance; Standard normal distribution/ unit normal curve and Z scores; Sampling error of the mean and standard error; Hypothesis testing - null and alternative hypothesis, Type I and Type II errors; t tests: One Sample and Two sample t tests, paired and unpaired; Chi square test and ANOVA : Chi square, One and Two way ANOVA, contingency tables, the F test, post hoc tests and corrections; and Regression: Simple linear regression and multiple regression; Non parametric statistics: elementary idea about when these tests should be used, assumptions, and tests that can be used in lieu of t tests, ANOVAs; confidence intervals and statistical power, effect size. *Rather than mathematical derivations and formulations, questions will test applied aspects of these statistical concepts.* You will be tested on

- 1) Your ability to interpret graphical data
- 2) Spot data inconsistencies and errors on graphical representations
- 3) Understanding of errors than compromise reliability and validity of a study
- 4) How to operationalize constructs into variables

- 5) What sort of experimental designs merit which kind of statistical tests to be applied
- 6) Interpreting test scores and what can you conclude about experimental results from statistical testing of data

A good resource to prepare apart from any college level statistical course material:

<http://onlinestatbook.com/>

Statistical skills involving latent variable modeling (in various forms), meta-analysis, and time series analysis will not be tested.

The second section will be grouped into six subsections out of which candidates will choose any four. Questions will be grouped according to the core domains in psychology: Biological, Developmental, Clinical, Social, Cognitive and Measurements and Methodologies. This section will follow the syllabus of the subject GRE test in psychology. Please use the following link to obtain the syllabus and sample questions.

[https://www.ets.org/s/gre/pdf/practice\\_book\\_psych.pdf](https://www.ets.org/s/gre/pdf/practice_book_psych.pdf). The following textbook might provide a good starting point for preparation:

Passer, M. W., & Smith, R. E. (2004). Psychology: The science of mind and behavior (2nd ed.). New York, NY, US: McGraw-Hill.

There are also several commercially available study guides which can help you prepare for this part of the test regardless of your academic background.