

Syllabus for Ph.D. admission Test 2021-22

Department of Pharmaceutical Technology:-

Research Methodology (50 Marks)

i. **Fundamentals of Research:** Definition of Research Problem; Objective of Research; Research Questions, Measurement issues, Research Hypothesis; Types of Research; Sources of literature (online/offline); Methods of Literature review; knowledge about h-index, i10-index, DOI, impact factor, citation, indexing of journal; Basic concepts of bioinformatics, cheminformatics, and omics; Contact and conduct with supervisor and administrative authorities; Legal and safety aspects of research, such as biohazards, procurement/outsourcing of research materials, handling of living/non-living toxic/hazardous materials; intellectual property rights.

ii. **Research Strategy:** Research Design; Sampling; Measurement Steps/process involved in Research; Data collection and analysis; Names and theoretical aspects of different softwares used in data analysis; Theoretical aspects of statistical tests, such as t-test, Z-test, univariate analysis of variance, multivariate analysis of variance, etc., Names of References managing soft wares and references style.

iii. **Research dissemination and impact metrics:** Synopsis; Thesis; Types of Publication; Patent; Technology transfer; Consultancy; Public Awareness; Dissemination into social bodies.

iv. **Ethics in Research:** Concepts of ethics and morality; Utilitarianism and consequentialism theory; Research misconduct; Fabrication and falsification of data; Authorship trading; Plagiarism in Research; Ethical Guidelines in the experiments with animals and human subjects.

Core Subject (50 marks)

GPAT2020 syllabus (<https://gpat.nta.nic.in/WebInfo/File/GetFile?FileId=6&LangId=P>)