

VPM CLASSES

TIFR

EXAM INFORMATION

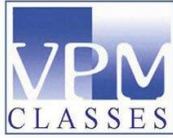


**Tata Institute of
Fundamental Research
(TIFR)**



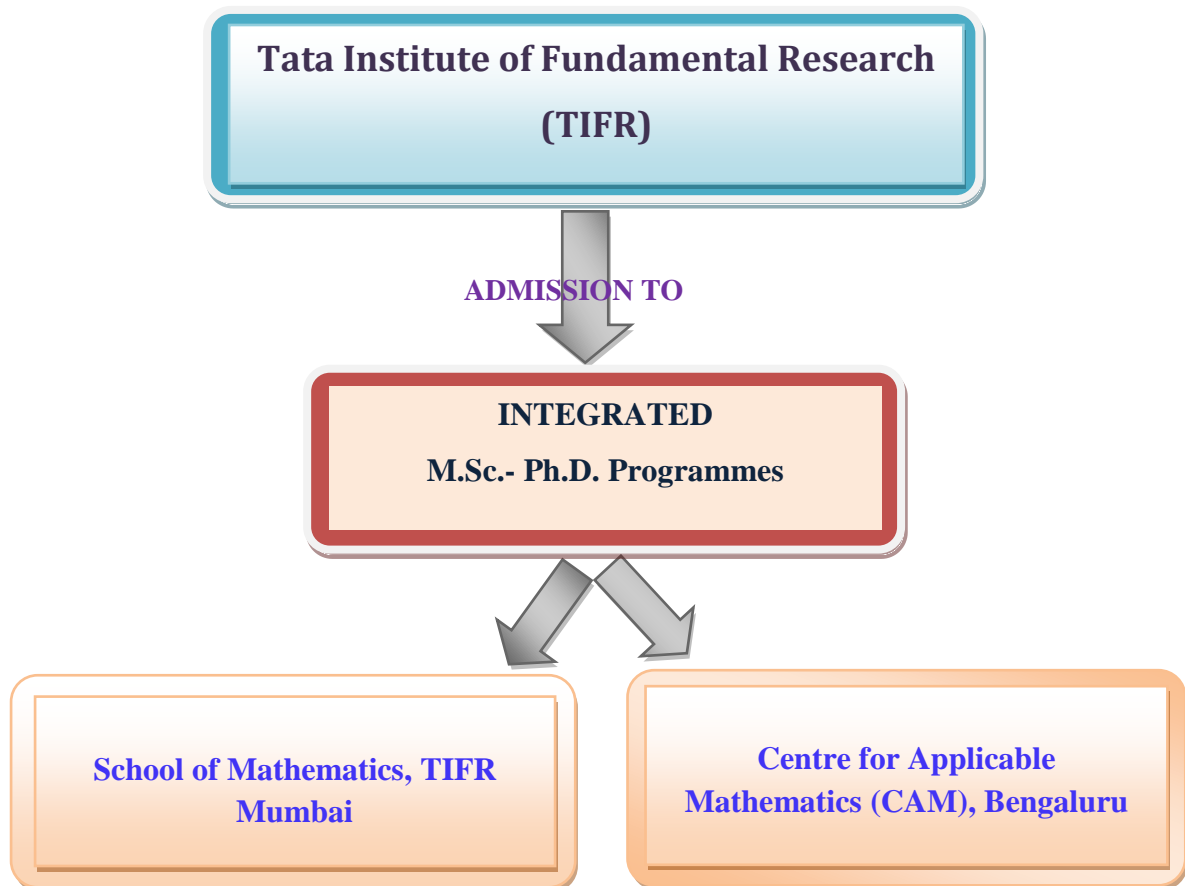
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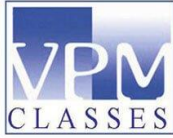
Email: info@vpmclasses.com



VPM CLASSES

IIT-JAM, UGC NET, CSIR NET, GATE, JEST, JNU, BHU, TIFR



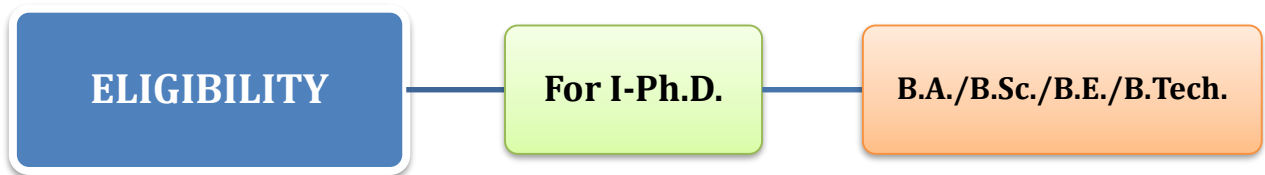


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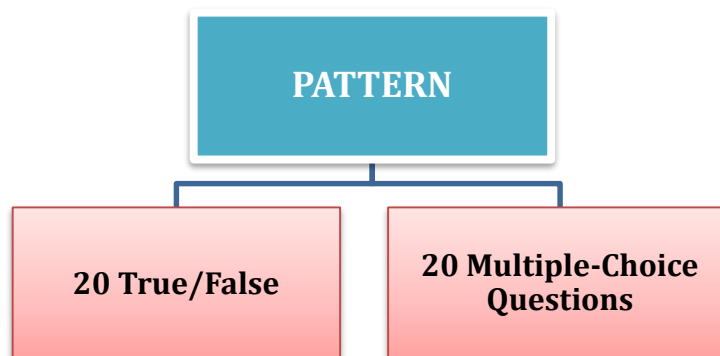
ELIGIBILITY CRITERIA: -

* Candidates in the final year of qualifying degree can also apply.



IIT JAM EXAM PATTERN

- **Duration of the examination:** - 2 hours.
- **Type of Questions:** Objective type MCQ
- **Medium:** - English only.
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SYLLABUS

Syllabus for Part I

Part I of the selection process is mainly based on mathematics covered in a reasonable B.Sc. course. This includes:

Algebra: Definitions and examples of groups (finite and infinite, commutative and non-commutative), cyclic groups, subgroups, homomorphisms, quotients. Group actions and Sylow theorems. Definitions and examples of rings and fields. Integers, polynomial rings and their basic properties. Basic facts about vector spaces, matrices, determinants, ranks of linear transformations, characteristic and minimal polynomials, symmetric matrices. Inner products, positive definiteness.

Analysis: Basic facts about real and complex numbers, convergence of sequences and series of real and complex numbers, continuity, differentiability and Riemann integration of real valued functions defined on an interval (finite or infinite), elementary functions (polynomial functions, rational functions, exponential and log, trigonometric functions), sequences and series of functions and their different types of convergence.

Geometry/Topology: Elementary geometric properties of common shapes and figures in 2 and 3 dimensional Euclidean spaces (e.g. triangles, circles, discs, spheres, etc.). Plane analytic geometry (= coordinate geometry) and trigonometry. Definition and basic properties of metric spaces, examples of subset Euclidean spaces (of any dimension), connectedness, compactness. Convergence in metric spaces, continuity of functions between metric spaces.

General: Pigeon-hole principle (box principle), induction, elementary properties of divisibility, elementary combinatorics (permutations and combinations, binomial coefficients), elementary reasoning with graphs, elementary probability theory.

Part II. The second part of the selection process varies according to the program and the center.