ISI MStat Entrance Guideline

Indian Statistical Institute is the pioneer of Statistics in the country. It conducts an entrance exam for the aspirants who want to pursue a **master's in Statistics** called the **ISI MStat Entrance Exam**.

Objective of this course : The M.Stat program offers advanced level training in the theory, methods, and applications of Statistics along with specialized training in selected areas of Statistics and allied fields. Depending on the area of specialization, students would be able to pursue an academic/research career in Statistics, Mathematics, Economics, Computer Science, and allied fields.

Eligibility Criteria : **Eligibility** In order to be **eligible for admission** to this program, an applicant must have a three year Bachelor's degree in Mathematics, or a BE/B Tech Degree, with Mathematics as a subject, or a B Stat degree from **ISI**.

SYLLABUS OF ISI MSTAT ENTRANCE AS PER LATEST GUIDELINE:

The MStat Entrance Exam mainly consists of 2 topics:

- **Mathematics**

- **Probability and Statistics**

Mathematics	Arithmetic, geometric and harmonic progressions
	Trigonometry
	Two dimensional coordinate geometry: Straight lines, circles, parabolas, ellipses and hyperbolas
	Elementary set theory
	Functions and relations
	Elementary combinatorics: Permutations and combinations, Binomial and multinomial theorem
	Theory of equations
	Complex numbers and De Moivre's theorem
	Vector spaces
	Determinant, rank, trace and inverse of a matrix
	System of linear equations
	Eigenvalues and eigenvectors of matrices
	Limit and continuity of functions of one variable
	Differentiation and integration
	Applications of differential calculus, maxima and minima
Probability	Notions of sample space and probability
	Combinatorial probability
	Conditional probability and independence
	Bayes Theorem
	Random variables and expectations
	Moments and moment generating functions

& **Statistics**	Standard univariate discrete and continuous distributions
	Distribution of functions of a random variable
	Distribution of order statistics
	Joint probability distributions. Marginal and conditional probability distributions. Multinomial distribution. Bivariate normal and multivariate normal distributions
	Sampling distributions of statistics
	Statement and applications of Weak law of large numbers and Central limit theorem
	Descriptive statistical measures
	Pearson product-moment correlation and Spearman's rank correlation
	Simple and multiple linear regression. Elementary theory of estimation (unbiasedness, minimum variance, sufficiency). Methods of estimation (maximum likelihood method, method of moments)
	Tests of hypotheses (basic concepts and simple applications of Neyman-Pearson Lemma)
	Confidence intervals. Inference related to regression
	Basic experimental designs such as CRD, RBD, LSD and their analyses. ANOVA. Elements of factorial designs
	Conventional sampling techniques (SRSWR/SRSWOR) including stratification

To download the syllabus as mentioned in the official website visit https://www.isical.ac.in/

Or click on the link below to direct download https://documentcloud.adobe.com/link/track?uri=urn:aaid:scds:US:ebd38fec-a9d4-4a8d-a8d0-1b35530affcb

Question Paper Pattern

1.   **PSA with 30 Single Option Correct Problems (2 hour time)**

2.   **PSB with 8 – 10 Subjective Questions (2 hours time)**

Topic wise Question Paper Pattern

Topics	IIT (%)	ISI PSA (%)	ISI PSB (%)	Average
Probability Theory	39	30	25	31.33333333
Real Analysis	16	15	14	18.33333333
Linear Algebra	11	13	14	12.66666667
Estimation Theory	13	10	27	16.66666667
Testing of Hypothesis	7	4	6	5.666666667
Theory of Regression	0	5	8	4.333333333
Combinatorics and Basic Probability	0	9	6	5
High School Mathematics	4	14	0	6

Exam Pattern & Marking Scheme :

Round	Paper	Exam Type	Duration	Marking Scheme
Round 1	PSA	Multiple Choice Questions	2 Hours	➢ There Will Be 30 Questions Of 4 Marks Each ➢ An Unattempted Question Fetches 1 Mark ➢ A Wrong Answer Fetches 0 Marks
	PSB	Descriptive Questions	2 Hours	➢ There Will Be 8 Questions ➢ Attempt As Many As Possible ➢ Marking Scheme To Be Decided By The Institute ➢ Partial Marks Will Be Awarded For Partial Answers ➢ Usually, Even If The Student Is Unable To Arrive At The Answer But The Approach Is Correct, Then Partial Marks Are Awarded

Round 2	Interview Round	Conceptual Questions Will Be Asked Pertaining To The Syllabus

BOOKS

You Can Check Out For Reference

Let's start with the **Mathematics books required for ISI MStat Entrance Exam Preparation**:

High School Mathematics - The mathematics part is super easy. So just be fluent in your 10+2 syllabus of mathematics and have a piece of sound knowledge in Calculus and Linear Algebra. Also, solve past year problems.

Let's discuss the books for Probability and Statistics Part, breaking it into different subsections according to the syllabus:

1. **Combinatorics and Probability Theory**

   Book 1: (Chapter 1 - 8) –

   A First Course in Probability by Sheldon Ross

   <mark>CLICK THE LINK BELOW TO DOWNLOAD THE PDF FILE</mark>

   A First Course in Probability

By Sheldon Ross

https://documentcloud.adobe.com/link/track?uri=urn:aaid:scds:US:6520df6d-a2ef-473e-b687-d397e330088f

Book 2: (Chapter 1 - 7)

An Introduction to Probability and Statistics

An Introduction to Probability and Statistics

https://documentcloud.adobe.com/link/track?uri=urn:aaid:scds:US:d32ad8ae-6ef9-4e93-8da8-4377c40bbe52

Book 3: (Chapter 1 - 6) [For Quicker Purposes]

Mathematical Statistics and Data Analysis by J.A.Rice

Mathematical Statistics and Data Analysis

By J. A. Rice

https://documentcloud.adobe.com/link/track?uri=urn:aaid:scds:US:edcfb296-494e-493d-82a0-6eb45b301693

2. **Linear Algebra**

Book: (Chapter 1 - 5, 7)

Linear Algebra and Its Applications by Gilbert Strang

Linear Algebra and Its Application

By Gilbert Strang

https://documentcloud.adobe.com/link/track?uri=urn:aaid:scds:US:fb8d10f0-4f07-4b8b-a041-04669d1bf498

3. **Calculus and Real Analysis**

Book: (Chapter 2, 4, 5, 7)

Understanding Analysis by Stephen Abbott

Understanding Analysis

By Stephen Abott

https://documentcloud.adobe.com/link/track?uri=urn:aaid:scds:US:cadfff48-c0ed-4096-96d9-c881aea4828d

4. **Statistical Inference**

Book 1: (Chapter 7, 8, 9)

Statistical Inference by Casella Berger

Statistical Inference

By Casella Berger

https://documentcloud.adobe.com/link/track?uri=urn:aaid:scds:US:ff60fe75-c72c-4a8b-a025-60643cc0ca8e

Book 2: Chapter (8,9)

Mathematical Statistics and Data Analysis by J.A.Rice

Mathematical Statistics and Data Analysis

By J. A. Rice

https://documentcloud.adobe.com/link/track?uri=urn:aaid:scds:US:edcfb296-494e-493d-82a0-6eb45b301693

5. **Regression Techniques**

Book: (Chapter 14)

Mathematical Statistics and Data Analysis by J.A.Rice

Mathematical Statistics and Data Analysis

By J. A. Rice

https://documentcloud.adobe.com/link/track?uri=urn:aaid:scds:US:edcfb296-494e-493d-82a0-6eb45b301693

6. **Sample Survey**

Book: (Chapter 7)

Mathematical Statistics and Data Analysis by J.A.Rice

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Mathematical Statistics and Data Analysis

By J. A. Rice

https://documentcloud.adobe.com/link/track?uri=urn:aaid:scds:US:edcfb296-494e-493d-82a0-6eb45b301693

Looking For A Complete Set Of Study Materials?

SET OF 6 BOOKS WITH PRACTICE SETS AND MODEL PAPERS WILL DELIVERED TO YOUR DOORSTEP.
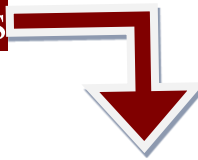
Contact us now @ 9836793076

Preparation Strategy:

- ✓ Start solving your past year's paper.
- ✓ Make a Separate Copy.
- ✓ Try to figure out what you can solve and what you cannot.
- ✓ Take this feedback and try to work on your weak areas.
- ✓ Take some guidance from some expert like seniors, teachers, etc (Not Necessary)
- ✓ Repeat.

Looking For A Complete Study Plan?

Here You Can Check Our Strategies

- **Regular live classes** are conducted by our prestigious faculty over Skype as they go over numerous concepts and problem-solving tricks.

- Comprehensive compact **syllabus oriented study materials** **are** delivered to student's doorstep in hardcopies, printed format.

- **Special** **doubt-clearing** **classes** are conducted regularly as the student progresses through the course.

- **Mock tests** are conducted on a weekly basis to track the progress of the student.

- **A thorough analysis** of the tests are conducted so that the student gets to work on weak points.

- **24*7 portal access with** **200+ Pre-recorded video lectures** by our esteemed faculty are available for those who cannot attend regular classes.

- **Video backups** are provided for students who have missed the classes.

Willing to avail a Free Mock Test?

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ALL THE BEST,

For Any Further Information And Previous Years Question Paper Visit The ISI Official Website: Https://Www.Isical.Ac.In/