

***Test Code : RE I / RE II (Short Answer type)
(Junior Research Fellowship in Economics)***

The candidates for Junior Research Fellowship in Economics are required to take two short answer type tests - RE I (Mathematics) in the forenoon session and RE II (Economics) in the afternoon session.

Syllabus for RE I

1. Permutations and combinations.
2. Elementary set theory; Functions and relations; Matrices.
3. Functions of one and several variables: limits, continuity, differentiation, applications, integration of elementary functions, definite integrals, theory of quadratic equations.
4. Constrained and unconstrained optimization, convexity of sets and concavity and convexity of functions.
5. Elements of probability theory, discrete and continuous random variables, expectation and variance, joint conditional and marginal distributions, distributions of functions of random variable.

Syllabus for RE II

1. Theory of consumer behaviour; theory of production; market structure; general equilibrium and welfare economics; international trade and finance; public economics.
2. Macroeconomic theories of income determination, Rational Expectations, Phillips Curve, Neo-classical Growth Model, Inequality.
3. Game Theory: Normal and extensive forms, Nash and sub-game perfect equilibrium.
4. Statistical inference, regression analysis (including heteroscedasticity, autocorrelation and multicollinearity), least squares and maximum likelihood estimation, specification bias, endogeneity and exogeneity, instrumental