



# TEERTHANKER MAHAVEER UNIVERSITY

(Established under Govt. of U. P. Act No. 30, 2008)

Delhi Road, Moradabad (U.P.)

## SYLLABUS FOR RESEARCH APTITUDE TEST IN EDUCATION

The syllabus for Research Aptitude Test (RAT) in Education is divided in two parts viz. Part A & Part B described below:

### PART – A

Part A of the RAT shall be designed to assess the research skills/aptitude of the candidate consisting of questions from the following areas:

- 1. Research Methodology:** meaning, characteristics, and ethical issues in research; types of research; research methods
- 2. Logical Reasoning:** arguments, deductive and inductive research; logical and Venn diagram; inferences; analogies.
- 3. Data Interpretation:** interpretation of data; mapping and analysis of data, tools for data analysis; quantitative and qualitative research.
- 4. General Awareness about Basic Science:** basic science up to the level of SSC.
- 5. Mathematical Reasoning:** number series, letter series, codes; relationships, classification.

### PART – B

Part-B of RAT is designed to assess subject specific knowledge of the candidate covering the following syllabus:

- 1. Philosophical Basis of Education:** Its nature and significance for teachers; Relationship Between philosophy and education, impact of philosophical supposition on education made by western school of philosophy namely Idealism, Naturalism, Pragmatism and Existentialism.  
**Educational Thinkers:** Their contribution in developing principles of education.  
**Educational Thoughts:** Contribution to educational thought and practice made by Great thinkers- Plato, Rousseau, Dewey, Gandhi, Tagore, Sri Aurobindo, and Vivekanand.
- 2. Sociological Basis of Education:** Concept and nature of sociology of education, relationship between education and Society, major factors in the process of social change, culture-meaning and nature of culture, role of education in cultural context, education and cultural change, **Education and Society:** Education as a social system, as a process of social progress and modernization, issues of equality of educational opportunity and excellence in education, equality vs. equity in education, education and democracy, constitutional provisions for education. **Nationalism and Education:** Education for national integration and international understanding.

3. **Educational Psychology:** Concept, concerns and scope of education psychology; contribution of psychology to education,  
**Human Development:** Stages of human development; Factors influencing development and their relative role, theories of Piaget and Bruner, major concepts and stages and implications for education.  
**Learning:** Concepts, Theories of learning and their implications.  
**Group Dynamics:** Group process, interpersonal relations, sociometric grouping, social and emotional climate of the classroom and influence of teacher characteristics.  
**Intelligence:** Theories of intelligence, measurement of intelligence, creativity, definition, factors fostering and guiding children.  
**Personality:** Concept, development, structure and dynamic of personality, theories of personality, assessment of personality techniques
  
4. **Research Methodology in Education:** Education as discipline, need of research in education, determining priorities in the field of educational research in India, interdisciplinary approach in education research and its implications, methods of educational research, developing a research proposal, problem and its sources, objectives of research,  
**Hypothesis:** Nature, definition, types, sources, characteristics of good hypothesis.  
**Sampling:** Unit of sampling, population, Sampling Techniques.  
**Tools and Techniques:** Reliability and Validity of various tools and techniques.
  
5. **Statistics in Education:** Nature of educational data, quantitative & qualitative data, analysis of data.  
**Descriptive and Inferential Statistics:** Fundamentals of statistics, type of error, one tailed and two tailed tests and t-test, the f-test.  
**Normal Probability Curve:** Its characteristics & application.  
**Non-Parametric Statistics:** Correlation, types of correlation.
  
6. **Technology in Education:**  
**Education Technology:** Concept, meaning, scope and significance of educational technology.  
**Components of Educational Technology:** Software, hardware & system approach, education technology and instructional technology, communication and instruction, designing of instructional strategies, memory, understanding and reflective levels of teaching, modification of teacher behavior, micro teaching, Flander's Instructional Analysis system.  
**Simulation:** Meaning, assumptions and procedures.  
**Programmed Instruction:** Development of programmed instructional materials.  
**Computer Assisted Instruction:** Education technology in formal, non-formal and informal education, distance education, open learning systems and educational technology.  
**Emerging Trends in Education Technology:** Evaluation and education technology, instructional design, system analysis and cybernetics- their meaning and application to education, teacher effectiveness, and criteria process and product of criteria.
  
7. **Measurement and Evaluation Process in Education:** Concepts, scope and need, taxonomies of educational objectives, norm-referenced and criterion-referenced measurement.  
**Measurement:** Measurement of achievement, aptitudes, intelligence, attitudes, interest, skills Interpretation of the above test-scores and methods of feedback to students, subjective and objective tools, essay type test, objectives test, scales, questionnaire, schedule, Inventories, performance tests, test construction, item analysis, test standardization.

**Evaluation:** Functions of evaluation and the basic principal of evaluation, interrelationship between measurement and evaluation in education, new trends in evaluation viz. grading, semester, continuous internal assessment, question bank, use of computer in evaluation.

8. **Educational Guidance & Counseling:** Concept, assumptions, issues and problems of guidance needs, scope and significance of guidance, types of guidance, agencies of guidance, principal of guidance, guidance and curriculum, guidance and classroom learning, vocational guidance. **Career Development:** Approaches to career guidance, vocationalisation of secondary education and career development, guidance of children with special needs, guidance of the gifted and creative students, guidance of under-achiever and first generation learners.

**Counseling Process:** Concept, nature, principal of counseling, counseling approaches, directive, non-directive, information orientation services and placement service and follow up services. **Evaluation of Guidance Programs:** Testing in guidance and counseling, human adjustment and mental health, psychological foundation of adjustment, role of motivation and perception in adjustment, principles of mental hygiene and their implication of effective adjustment, mental health and development of integrated personality.

9. **Special Education:** Concept of exceptionality, needs and problems of exceptional children, objective, historical perspective, special education, alternatives/programmes, integrated/inclusive education, education of orthopedically, handicapped types of handicap, education of visually impaired, education of hearing impaired, education of learning disabled, education of gifted, creative & juvenile delinquents.

**Guidance and Counseling for Exceptional Children:** Guidance and counseling for exceptional children, meaning and need, role of teachers and other specialist.