SIKKIM SARDAR PATEL UNIVERSITY, NAMCHI, SOUTH SIKKIM, INDIA

(Established and approved by the State Legislature of Government of Sikkim by Act 14 of 2023)

SYLLABUS FOR PH.D. | D.LITT. | D.SC. ENTRANCE TEST

Part A (50 marks)

General Aptitude (10 marks)

1. General Science: General understanding of science including matters of everyday observation and experience.

2. Current events: Knowledge of significant national and international events.

3. General mental ability and reasoning: Reasoning and analytical abilities.

4. Environmental awareness: Pollution and its impacts, climate change, sustainable development

5. Basic Computer Skills: Basic computer awareness and its uses. Role and use of computers in research.

6. Interactive English: Grammar, vocabulary, sentence completion, usage, synonyms, antonyms, one word substitute, idioms/phrases, error detection and comprehension.

7. Information and Communication Technology (ICT): Terminology and abbreviations used in ICT, applications of ICT in academics and research.

Research Aptitude (20 marks)

1. Meaning, nature, significance and types of research, synopsis, hypothesis, data collection, literature survey, sampling, interviewing, questionnaire, data processing, interpretation, report writing, bibliography, Article, research paper, seminar, conference, symposium, workshop etc.

2. Role of governing bodies/research organizations like UGC, CSIR, ICAR, ICSSR, ICPR, ISRO, DRDO etc. in research and development.

3. Basic Statistics for Research- Basic of Stats with Mean, Median, Mode, Standard Deviation & Variance. Their applications in research.

4. Basic concept of Permutation, Combination & Probability.

Quantitative Aptitude (10 marks)

1. Arithmetic:

- Basic operations (addition, subtraction, multiplication, division)
- Percentages
- Profit and loss
- Simple and compound interest
- Ratio and proportion
- Time, speed, and distance
- Time and work
- Averages
- Ages

2. Algebra:

- Basic algebraic identities
- Linear and quadratic equations
- Polynomials
- Factorization

3. Geometry:

- Basic concepts of geometry
- Triangles, circles, and quadrilaterals
- Areas and volumes

4. Number System:

- Properties of integers, fractions, and decimals
- Divisibility and remainders
- HCF (Highest Common Factor) and LCM (Lowest Common Multiple)

5. Data Interpretation:

- Tables
- Bar graphs
- Line charts
- Pie charts

6. Mensuration:

- Areas and volumes of geometric shapes (rectangle, square, circle, cube, cylinder, etc.)

7. Probability and Statistics:

- Basic concepts of probability

- Mean, median, and mode

- Standard deviation

8. Set Theory:

- Concepts of sets

- Union and intersection of sets

9. Permutations and Combinations:

- Counting principles

- Factorial notation

10. Logarithms:

- Basic properties of logarithms

- Applications of logarithms

11. Trigonometry:

- Trigonometric ratios (sine, cosine, tangent)

- Trigonometric identities

- Heights and distances

Qualitative Aptitude (10 marks)

1. Critical Thinking:

- Analyzing and evaluating information

- Drawing logical conclusions

- Identifying assumptions and implications

2. Problem Solving:

- Approaching problems methodically

- Developing creative solutions

- Decision-making skills

3. Verbal Ability:

- Reading comprehension
- Vocabulary
- Grammar and syntax

4. Logical Reasoning:

- Deductive and inductive reasoning
- Syllogisms
- Analyzing arguments

5. Analytical Skills:

- Breaking down complex information
- Identifying patterns and trends
- Making connections between different pieces of information

6. Communication Skills:

- Effective written and verbal communication
- Clarity of expression

7. Interpersonal Skills:

- Understanding social dynamics
- Teamwork and collaboration

8. Creativity:

- Thinking outside the box
- Generating novel ideas

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Part B: Descriptive knowledge on proposed research field of the subject concerned to be answered in 500 words (50 marks)

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Note: The merit list for admission to Pre-Ph.D. course will be prepared by the Department Research Advisory Committee (DRAC) after holding interview according to the following criteria:

a. 70% weight age to marks in the Entrance Test (Comprising of Part A and Part B).
b. 30% weight age to performance in the interview on the basis of criteria approved by DRAC for the concerned Department.