

MT- 8 MATHEMATICS EDUCATION

Unit – 1 Mathematics subject

- 1.1 Meaning and Nature of mathematics as a subject
- 1.2 Importance of mathematics
- 1.3 Mathematics in school curriculum (BSEB/ CBSE/ ICSE)

Unit – 2 Methods of teaching of mathematics

- 2.1 Aims and objective of mathematics teaching
- 2.2 Maxims of teaching of mathematics
- 2.3 Methods of teaching mathematics
 1. Inductive – Deductive method
 2. Analysis – Synthesis method
 3. Experimental method
 4. Heuristic method
- 2.4 Mathematics teacher – qualities and competencies
- 2.5 Mathematic laboratory and mathematical club

Unit – 3 Techniques and models of teaching in mathematics

- 3.1 Technique in Mathematics teaching
 1. Term teaching
 2. Simulation
 3. Task analysis
 4. Cognitive psychology based technique
 5. Technology based technique
- 3.2 Models of teaching
 1. Concept attainment model
 2. Advance organizer model

Unit – 4 Pedagogical analysis of Mathematics

- 4.1 Concept of pedagogical analysis
- 4.2 Approaches for pedagogical analysis, concept and importance
 1. Core element and value approach
 2. Content cum methodology approach

3. Information technology based approach
4. Mastery learning approach
5. System analysis approach

Unit – 5 Content cum methodology in teaching of mathematics

- 5.1 Structure of mathematics as a subject
- 5.2 Curriculum- concept, methods of curriculum construction
- 5.3 Analysis of syllabus for on standard (BSEB/ CBSE/ ICSE)
- 5-4 Analysis of textbook
- 5-5 Content analysis of one unit

Unit – 6 Evaluation of Mathematics

- 6.1 Importance of evaluation of mathematics
- 6.2 Evaluation according to area- cognitive, affective, psychomotor
- 6.3 Use of tools and technique of evaluation
 1. Achievement test
 2. Diagnostic test
 3. Check test
- 6.4 Remedial teaching
- 6.5 Online evaluation

REFERENCE BOOKS

- 1- Regarding Secondary School Mathematics – Cooper, Barry
- 2- The Teaching of Secondary School Mathematics – Buller, H.L. & Wren, F.L.
- 3- Teaching of Mathematics – Mangal, S.K.
- 4- A Text book of content cum methodology of Teaching Mathematics – NCERT.
- 5- The teaching of Mathematics – Sidhu, K.S.
- 6- The teaching of Mathematics – Chaddha & Aggrwal.
- 7- Teaching of Mathematics - Eleccher