

Cancelled

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NORTH MAHARASHTRA UNIVERSITY, JALGAON.

Syllabus of - MATHEMATICS (B.Ed.) (June, 1992)

Content Cum Methodology

UNIT - 1

Place of Mathematics in the School Curriculum :-

- a) Nature and Scope.
- b) Importance of the subject - to other subjects & in daily life.

UNIT - 2

Evaluation. :-

- a) Concept of Evaluation.
- b) Taxonomy of objectives.
- c) General objectives at Secondary level.
- d) Objectives of teaching with specifications.
- e) Learning Experiences in Mathematics.

UNIT - 3

Planning. :-

- a) Year's Planning.
- b) Unit Planning.
- c) Lesson Planning :- Planning for day to day teaching construction of unit test.
- d) Item analysis.

UNIT - 4

Methods and Content :-

- A) Methods :-
  - 1) Inductive Deductive method.
  - 2) Analytical & Synthetical method.
  - 3) Experimental method.
  - 4) Heuristic method.
  - 5) Project method.
  - 6) Programmed Learning.
  - 7) Problem Solving.
  - 8) Comparison.
  - 9) Innovative practices.

( See 2 Page. )

B) Content :-

Note :- The figures shown against each item of content indicates the method of teaching as in 'A'

- a) Set 1,3,6.
1. Set Concept & types.
  2. Number set & operations (N,W,I,Q,R.)
- b) Equation 1,2,3,6.
1. Linear equations.
  2. Quadratic equations.
  3. Simultaneous equations.
  4. Graphs.
- c) Polynomials 1,2,6.
1. Algebraic expressions & operations.
  2. Factorisation.
  3. L.C.M. and H.C.F.
  4. Rational expressions.
- d) Ratio, proportion and Variation 1,2,6.
- e) Indices and Logarithms 1,6.
- f) Partnership, Profit and Loss 1,2,3,6.
- g) Percentage and Interest 1,2,6.
- h) Sequence and Series 1,4,6,8.
- Concept and Sum of n terms in respect of Arithmetic and Geometric sequences and series.
- i) Physical space 1,2,3.
1. Point, Line, Segment, Ray, Plane, Angle, Types, Parallel lines.
- j) Triangle 1,2,3. :- Concept, Type, Area, Theorms, Pythagorous Theorm.
- k) Quadrilateral 1,3.
- Concept, Types, Area, Theorms.
- l) Polygon and Circle 1,2,3,4.
- Concept, Area and Theorms.
- m) Solid Figures and mensuration 1,3,4.
- n) Geometric Constructions 2,3.
- o) Trigonometry 1,7,8.
1. Six trigonometric ratios.
  2. Problems on heights and distances.
  3. Trigonometric ratios for angles  $30^{\circ}$ ,  $60^{\circ}$ , and  $90^{\circ}$ ,
  4. Simple identities.

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P) Plane co-ordinate geometry 1,2,4,7.

Cartesian Co-ordinate system. Distance formula, section formula, Concept of Locus.

UNIT - 5

Audio Visual Aids.

- a) Importance.
- b) Charts, Models, Radio, Taperecorder, Over head Projector, Film Strip Projector, 16 mm Projector, T.V. and V.C.R.

UNIT - 6

Study of Curriculum (Secondary) of Mathematics. :-

- a) Principles of construction of curriculum.
- b) Review of Text book.

UNIT - 7

Mathematics Teacher:-

- a) Specific qualities for teaching mathematics.
- b) Pre service and In service training.

UNIT - 8

Testing:-

- a) Characteristics of good measuring instrument with special reference to mathematics:- Validity, Reliability, Objectivity, Practicability.
- b) Speed and Accuracy tests.
- c) Achievement tests.
- d) Diagnostic tests.
- e) Remedial teaching.

PRACTICAL WORK

- 1. Preparation of a unit plan and a unit test.

OR

- 1. Critical study of one text book of mathematics.

LIST OF RECOMMENDED BOOKS :-

1. गणिताने अध्यापन. व. मा. देशमुख.
2. गणित अध्यापन पद्धती. प्रो. ड. ना. जगताप.
3. गणित अध्यापन आणि अध्यापन- भा. गो. बापट.  
नि. ना. कुलकर्णी.
4. Teaching of Mathematics -- Sidhu S. Agarwal.
5. Content Cum Methodology of Teaching Mathematics  
for B.Ed. Students.-- N.C.E.R.T. New Delhi.

SUGGESTED WEIGHTAGE ACCORDING TO UNIT

Unit	Marks	No. of Periods
1	5	4
2	5	4
3	5	4
4	65	52
5	5	4
6	5	4
7	5	4
8	5	4
Total	100	80

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