

॥ अंतरी पेटुः ज्ञानज्योत ॥
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° , 60° , and 90° ,
4. Simple identities.

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. गणिताचे अध्यापन. व. पा. देशमुख.
2. गणित अध्यापन पद्धती. प्रा. ड. ना. जगताप.
3. गणित अध्ययन आणि अध्यापन- भा. गो. बापट.
वि. 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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