- Various methods of teaching Civics (Project, Problem Solving, Supervised Study, Lecture, Discussion and Brain Storming).
- Innovative practices in Civics teaching.
- Field Trap
- Mock Session

Unit-IV: Instructional Support System

- Community resources
- Teaching aid in Civics Teaching.
- Techniques of interviewing.

Unit-V: Evaluation of Civics teaching

- Purpose and concept of evaluation.
- Objective based evaluation.
- Preparation of achievement test:
  (i) Various types of question.
  (ii) Blue Print
  [iii] Preparation of question paper.

Sessional Work (20 Marks)

(1) One test of 10 Marks.

(2) Any one of the following (10 Marks):

1. Content analysis and preparation of instructional material related to any unit of subject related to Civics.
2. Preparation of TV/Radio Script.
3. Study of anyone aspect of Indian Political issues.
4. Visit any local bodies as Panchayat, Municipality, Municipal Corporation and Nagar Nigam and prepare report about the functions of local bodies.
5. Prepare a plan of Civics class room.
6. Preparation of a plan for equipping a civics lab.
7. Prepare five slides related to Civics teaching contents at Secondary level.

8. Collection of news paper cutting related to Civics issues.

HISTORY

Objectives: To enable the student teachers to:

1. Understanding the concept, nature and scope of History.
2. Understand the nature of history as continuous process of development and change.
3. Understand the aims objectives of teaching History at different levels of the secondary stage.
4. Prepare unit plans, lesson plan and its related teacher aids.
5. Develop the syllabus for teaching history for different classes and its critical calculation.
6. Review the text book of history at the secondary level.
7. Understand the spirit and applying different methods and techniques of teaching history at the secondary stage.
8. Evaluate methodically the tools and techniques of evaluation at the different levels of secondary stage.

Unit-I: Nature and Scope of the Subject

- Meaning nature and scope of history.
- Importance of teaching history.
- Aims and Objective of teaching History at different levels.
- Importance of studying Local History, National History and World History in the context of National integration & International brotherhood and global citizenship.

- Co-relation of History with other school subjects.

Unit-II: Curriculum and Planning

- Meaning and concept of curriculum.
- Fundamental principles of formulating curriculum in History and critical appraisals of the existing syllabus.
- Lesson Plan-Annual Plan, Unit Plan and Daily lesson plan of teaching History.
- Qualities and Professional growth of History Teacher, his role in future prospective.

Unit-III: Methods and Approaches

Various methods of teaching History (Store telling, Biographical Dramatization Time Sense, Source, Project and Supervised study method).

Unit-IV: Instructional Support System

- Audio Visual aids in teaching History
- Text book, teacher, co-curricular activities.
- Community resources, Computer, T.V.
- History Room
- Planning of historical excursion.
- Co-curricular activities.

Unit-V: Evaluation

- Concept and Purpose of evaluation.
- Objective based evaluation.
- Tools & techniques of evaluation in history teaching:
  (i) Various types of question.
  (ii) Blue Print
  (iii) Content analysis

Sessional Work (20 Marks)

(1) One test of 10 Marks

(2) Any one of the following 10 Marks:

1. Content analysis & preparation of instructional material related to any unit of subject related to History.
2. Study of analysis aspect of Historical issue and preparation of a report.
3. Visit to any historical place and preparation of report.
4. Collection of news paper cutting related to history issues.
5. Developing a lesson plan based on new methods / technique in history.

ECONOMICS

Objectives: To enable the student teachers to:

1. Refresh the knowledge about the meaning, Importance, nature, scope & aims of Economics.
2. Acquaint with the Aims, Objectives & value - outcomes through teaching Economics.
3. Develop ability to plan for suitable instructions in Economics.
4. Organize group-activities and project and to use various instructional strategies & methods for effective teaching of the subject.
5. Establish correlation of Economics with other school-subjects.
6. Develop necessary skills to use various teaching aids, (Particular locally available material aids).
7. Develop skill to successfully use various evaluation techniques and to interpret the results.
8. Develop appropriate attitude towards the subjects and country's economy.

Unit-I: Nature, Scope and Objective

1. Meaning nature and scope of Economics.
2. Importance of Economics in School Curriculum.

3. Aims and Objective of teaching Economics at different levels.
4. Correlation of Economics with other school subjects.

Unit-II: Curriculum and Planning

1. Meaning and concept of curriculum.
2. Fundamental principles of formulating curriculum in Economics
3. Critical Appraisal of the existing syllabus:
   (a) Lesson Plan: Annual Plan, Unit Plan and Daily lesson plan of teaching Economics.
4. Qualities and Professional growth of History Teacher, his role in future prospective.

Unit-III: Methods and Approaches to teaching Economics

1. Various methods of teaching Economics- Project, Problem solving, Discussion, Analytic-Synthetic and Lecture Method.
2. Innovative Practices in Economics teaching - Brain Storming, workshop.

Unit-IV: Instructional Support System

1. Use of Teaching aids in Economics.
2. Print & Non-Print media, community resources, Lab, and Museum.
3. Economics teacher and his qualities.
4. Critical appraisal of Economics, Text Books.

Unit-V: Evaluation of Teaching Economics

1. Concept and Purpose of evaluation.
2. Objective based evaluation.
3. Preparation of achievement test:

(i) Various types of question.
(ii) Blue Print
(iii) Content analysis

Sessional Work (20 Marks)

(1) One test of 10 Marks.
(2) Any one of the following 10 Marks:

1. Content analysis & preparation of instructional material related to any unit of subject related to Economics.
2. Construction of objective type test items.
3. Prepare five slides related to Economics teaching content at senior secondary level.
4. Critical appraisal of Economics syllabus at senior secondary level.
5. Preparation of 10 frames of linear or branching type programmes on any topic of Economics.

GEOGRAPHY

Objectives: To enable the student teachers to:

1. Understanding the modern concept of Geography.
2. Understand the aims & objectives of teaching Geography.
3. Prepare yearly plan, unit plan, lesson plan for the different classes.
4. Prepare maps & charts to illustrate the contents of different classes and use them effectively.
5. Critically evaluate the existing school syllabus and review the text book of Geography.
6. Apply appropriate methods and techniques of teaching of particular topics a different levels.
7. Arrange field trips and local surveys.
8. Prepare achievement test and diagnostic test, administration of the test, analysis of results and make suggestion for remedial teaching.

Contents

I. **Nature, Scope and Objectives:**

(a) Changing Concept of Geography - Practical Geography
(b) Its place and scope (importance).
(c) Aims and Objectives of Geography teaching at secondary level, its role in developing the international understanding.
(d) Correlation of Geography with social sciences, economics, Civics, Natural Sciences, Environmental Sciences.

II. Curriculum & Planning:

(a) Characteristics of a good Geography Curriculum.
(b) Critical Appraisal of Geography syllabus.
(c) Planning for daily lesson, yearly plan & Unit plan.
(d) Geography Text Book
(e) Qualities, role & professional growth of Geography Teacher.

III. Methods & Approaches:

(a) Regional method, Demonstration, Inductive Deductive, Project, Comparative, Lab, Method
(b) Field trips, local & regional Geography.
(c) Other Innovative Practices- Programmed Learning, Computer, Geography Club, Geography Lab.

IV. Instructional Support System:

(a) Teaching aids lab equipment.
(b) Geography room/Laboratory & Museums.
(c) Resource material and use of local resources in teaching Geography.
(d) Co-Curricular activities.

V. Evaluation

(a) Tools and techniques of evaluation in Geography.
(b) Achievement Test:

(i) Various types of question.
(ii) Blue-Print
(iii) Content analysis

Sessional Work (20 Marks)

(1) One test of 10 Marks
(2) Any one of the following 10 Marks:

1. Preparation of maps, charts and models for physical Geography.
2. Develop two lesson plan based on new methods and approaches.
3. Critical Appraisal of Geography syllabus at Secondary level.
4. Construction of objective type test items.
5. Collection of news paper cuttings related to Geographical issues.
6. Preparation of a report on visit some place of Geographical interest.

HOME SCIENCE

Objective:- To enable student Teacher to:

1. Understand the Nature and Importance of Home Science & its correlation with other subjects.
2. Understand aims and objectives of the subject.
3. Realize the essential unity between laboratory work and theoretical background of the subject.
4. Analyze school syllabus of the subject in relation to its applicability to practical situation and adaptability of the curriculum to local needs.
5. Utilize effectively the instructional material in teaching Home-Science.
6. Construct test items to measure objectives belonging to various cognitive levels.
7. Identify specific learning difficulties in Home -

Science and to provide the suitable remedial instructions to them.

Content

Unit-I

a. Nature and meaning of Home-Science.
b. Values and importance of Home-Science for students of higher secondary stage.
c. Correlation of Home-Science with other subjects.
d. Aims and objectives of Home-Science (Bloom's approach to specify the outcomes).

Unit-II

a. Problem Solving Method
b. Demonstration Method
c. Experimental Method
d. Project Method
e. Lecture-cum-demonstration method.
f. Question-Answer Techniques
g. Text Book
h. Dramatization and Field Trips.

Unit-III

a. Concept of Planning for Home-Science Teaching.
b. Various steps of Planning-Unit & lesson Planning.
c. Importance and advantage for Planning of Unit and Lesson Plan
d. Qualities of a good Home-Science teacher.
e. Role of Home-Science teacher.

Unit-IV

a. Specific use of the following: Audio Visual aids in teaching of Home-Science.
b. Laboratory (Location, Building)
c. Charts
d. Diagrams

e. Black Board
f. Reference Books
g. Graphs
h. Radio
i. T.V.
j. Magazines
k. Computer

Unit-V

a. Concept, principles, basis and the measures to improve a syllabus.
b. Curriculum in Home-Science for different stages of school instruction.
c. Concept of measurement and evaluation.
d. Criteria of good evaluation.
e. Merits and limitation of evaluation.
f. Preparation of Blue-Print Test.

Sessional Work (20 Marks)

(1) One test of 10 Marks
(2) Any one of the following 10 Marks:
1. Writing an essay on any topic based on the contents of the above units.
2. Preparation of Visual-aid for solving community nutrition problems.

GENERAL SCIENCE

Objective:- To enable student Teacher to:

1. Understand the nature, scope, values and the objectives of teaching Science at Secondary level.
2. Develop competence in teaching different topics of Science effectively.
3. Develop Scientific temper & provide teaching in scientific method.

4. Use various methods with appropriateness of content, level and classroom situations to make pupil's learning meaningful.
5. Utilize the instructional material effectively in the teaching of Science.
6. Organize Co-curricular activities & practical work Science.
7. Use method most appropriate to asses the progress & achievement.
8. Diagnose the gaps & misconception in learning Science and evolve remedial measures.

Contents

Unit-I: Nature, Scope and Objectives

A. Definition and Concept of Science.
B. Place of Science in School Curriculum.
C. Values of teaching Science at School level.
D. Correlation Science with other subject.
E. Objectives of teaching Sciences at Secondary level.

Unit-II: Curriculum and Planning

A. Principles of developing Science Curriculum at Secondary level.
B. Factors affecting the selection & organization of Science Curriculum.
C. Unit Plan and lesson Plan.
D. Qualities and responsibilities of Science teacher.
E. Role of teacher in training students in Scientific method & developing creativity among students.

Unit-III: Methods of approaches

A. Lecture method, Demonstration, Lab. Method, problem solving, Heuristic, Project Method, Inductive & deductive method.

B. Enquiry approach, programmed instruction, panel discussion, team teaching, General & Workshop.

Unit-IV: Instructional Support System

A. Multi sensory aids- charts, models, Bulletin, board, flannel board, Transparencies, Overhead Projector, Radio, T.V., Computer.
B. Co-curricular activities- Organization of Science club, Science fair and excursion, use of community resources.
C. Science Lab- Planning & equipping Science Lab, Guidelines for organizing practical work Care and maintenance of the equipment, safety precautions for work in Science Lab.

Unit-V: Evaluation

A. Evaluation: Concept, Types and Purposes.
B. Type of Test items: Objective type, S.A. & Essay type.
C. Planning objective based test time of different types.
D. Preparation of blue print and construction of Achievement test.
E. Evaluation of practical work in Science.

Sessional Work (20 Marks)

(1) One test of 10 Marks
(2) Any one of the following 10 Marks:
1. Life sketch & contribution of any one prominent Indian Scientist.
2. Conducting and reporting two experiments useful at secondary level.
3. Preparation of 10 frames of linear or branching type programmes on any topic of General Science.

4. Construction & administration of a Diagnostic test on any one unit of General Science.

CHEMISTRY

Objective:- To enable student Teacher to:

1. Understand the Nature, Place, Values and the Objectives of teaching Chemistry at Secondary / Senior Secondary level.
2. Establish its correlation with other subjects.
3. Evaluate critically the existing syllabus of Chemistry prescribed for Secondary/Senior Secondary level in the State of Rajasthan.
4. Develop yearly plan, unit plan and lesson plan for Secondary/Senior Secondary classes.
5. Provide training in Scientific method & develop Scientific temper among their students.
6. Use various methods & approaches of teaching Chemistry.
7. Acquire the ability to develop the instructional support system.
8. Plan and organize chemistry practical work in the Laboratory.
9. Organize Co-curricular activities and utilize community resources for promoting Science learning.
10. Use method most appropriate to assess the progress and achievement of the pupil & thus prepare appropriate test for the purpose (both theoretical & practical).

Contents

Unit-I: Nature, Scope and Objectives

1. Nature of Science with special reference to Chemistry.

2. History of Chemistry with special reference to India.
3. Place & values of teaching Chemistry at Secondary/Senior Secondary level.
4. Correlation of Chemistry with other subjects.
5. Objectives of teaching chemistry at Secondary / Senior Secondary level.

Unit-II: Curriculum and Planning

1. Principles of developing Chemistry Curriculum at Secondary/Senior Secondary level.
2. Modern trends in Chemistry Curriculum: CBA, CHEM Study, NUFFIELD-O & A level.
3. Critical appraisal of Chemistry syllabus at Secondary / Senior Secondary level prescribed by Board of Secondary Education, Rajasthan.
4. Planning daily lesson plan, unit plan & yearly plan.
5. Qualities & responsibilities of Chemistry teacher.
6. Teacher's role in training students in scientific method & in developing creativity & Scientific temper among learners.

Unit-III: Methods of approaches

1. Lecture method, Demonstration method, Lab based methods, Inductive & Deductive method, problem solving, Heuristic & Project method.
2. Enquiry approach, programmed instruction, Group discussion, self study, Team teaching, CAL, Seminars & Workshops.

Unit-IV: Instructional Support System

1. Multisensory aids- charts, models, flannel board, Transparencies, Overhead Projector, Radio, T.V., Computer.
2. Co-curricular activities- Organization of Science club, Science fair & visits to places of Scientific

interest.

3. Chemistry Lab : Layout plans, equipments, furniture, maintenances of records, repair, care and im provisation of apparatus, safety measures in Lab, Organization of Practical work.
4. Role of State & National Level Institutions & Laboratories Like DST, NCL, Fertilizer, Pesticide & Chemical Companies like Hindustan Zinc Ltc.
5. Characteristics of a good text book & evaluation of a Text Book.

Unit-V: Evaluation in Chemistry

1. Evaluation: Concept, types and purposes.
2. Type of test items and their construction
3. Preparation of Blue Print & Achievement Test.
4. Diagnostic Testing & Remedial teaching.
5. Evaluation of practical work in Chemistry.

Sessional Work (20 Marks)

(1) One test of 10 Marks

(2) Any one of the following 10 Marks:

1. Life sketch & contribution of any one prominent Indian Chemist.
2. Preparation of scrap book containing original Science (Scientific cartoon) Stories / articles / features / plays / Interview report useful for teaching of Chemistry.
3. Planning an out of class activity to use local environment to teach Chemistry.
4. Conducting and reporting two experiments useful at Secondary/Senior Secondary level (other than those in syllabus).
5. Description & designing of any Improvised apparatus.

6. A critical study of any one Senior Secondary Lab of Chemistry.
7. Preparation of 10 frames of linear or branching type programmes on any topic of Chemistry
8. Preparation of Radio or T.V. script.

BIOLOGY

Objective:- To enable student Teacher to:

1. Understand the Nature, Place, Values & Objectives of teaching Biology at Secondary level.
2. Establish its correlation with other subjects.
3. Evaluate critically the existing syllabus of Biology prescribed for Secondary/Senior Secondary level in the State of Rajasthan.
4. Develop yearly plan, unit plan and lesson plan for Senior Secondary classes.
5. Provide training in Scientific method & develop Scientific temper among their students.
6. Use various methods & approaches of teaching Biology.
7. Acquire ability to develop instructional support system.
8. Plan and organize Biology practical work in the Laboratory.
9. Organize Co-curricular activities and utilize community resources for promoting Science learning.
10. Use method most appropriate to assess the progress and achievement of the pupil & thus prepare appropriate test for the purpose (both theoretical & practical).

Contents

Unit-I: Nature, Scope and Objectives

1. Nature of Science with special reference to Biology.
2. Main discoveries and development in Biology.
3. Place & values of teaching Biology at Secondary / Senior Secondary level.
4. Correlation of Biology with other subjects.
5. Objectives of teaching Biology at Secondary/ Senior Secondary level.

Unit-II: Curriculum and Planning

1. Principles of Biology Curriculum at Secondary/ Senior Secondary level.
2. Modern trends in Biology Curriculum: B.S.C.S., Chem Study, NUFFIELD-O & A level.
3. Critical appraisal of Biology syllabus at Secondary / Senior Secondary level prescribed by Board of Secondary Education, Rajasthan.
4. Planning daily lesson plan, unit plan & yearly plan.
5. Qualities & responsibilities of Biology teacher. Teacher's role in training students in scientific method and in developing creativity and the scientific temper among students.

Unit-III: Methods of approaches

1. Lecture method, Demonstration method, Lab based methods, Inductive & Deductive method, problem solving, Heuristic & Project method.
2. Enquiry approach, programmed instruction, Group discussion, self study, Team teaching, computer assisted learning, Seminars & Workshops.

Unit-IV: Instructional Support System

1. Multisensory aids - charts, models, specimen, bulletin-boards, flannel board, Transparencies, slides, projector, Overhead Projector, Radio, T.V., Computer.

2. Co-curricular activities- Organization of Science club, Science fair trips and use of the community resources.
3. Biology Lab: Organization of Biology Laboratory, Arrangement & Apparatus, Care & Maintenance of equipment & specimen, organization of practical work in Biology.
4. Role of State & National Level Institutions & Laboratories Research Centers in Botany, Zoology & Agriculture.
5. Characteristics of a good text book & evaluation of a Text Book.

Unit-V: Evaluation in Biology

1. Evaluation: Concept, types and purposes.
2. Type of test items and their construction
3. Preparation of Blue Print & Achievement Test.
4. Evaluation of practical work in Biology.

Sessional Work (20 Marks)

(1) One test of 10 Marks

(2) Any one of the following 10 Marks:

1. Life sketch & contribution of any one prominent Indian Biologist.
2. Preparation of Harbarium (scrap book).
3. Prepare any one of the following related to the environment education: (i) posture (miniature), (ii) Article, (iii) Story, (iv) Play.
4. Description of any two teaching models.
5. Prepare a Radio or T.V. Script.
6. Make a list of local resources useful in teaching Biology and prepared lesson plan using some of them.
7. A case study of any one Senior Secondary Lab of Biology.
8. Preparation of 10 frames of Linear or Branching

type programmes on any topic of Biology.

9. Construction and administration of Diagnostic test on any case.

PHYSICS

Objective:- To enable student Teacher to:

1. Understand the Modern Concept of Physics.
2. Understand Aims & Objectives of teaching Physics.
3. Appreciate the contribution of eminent physicists in connection with the development of physics.
4. Plan curriculum at Secondary & Senior Secondary level.
5. Analyse the Syllabus of the subject in relation to its applicability to practical situations.
6. Develop scientific attitude & provide a training to scientific method to their students.
7. Write the objectives in behavioral terms, analyze the content and be skil's in concept formation.
8. Develop unit and lesson plan.
9. Use various methods and teaching aids with appropriateness of content, level and class room situation.
10. Plan & organize Physics practical in the laboratory.
11. Organize co-curricular activities related to Physics.
12. Use methods most appropriate to assess the progress and achievement of the pupils using variety of tools and techn'ques for Physics theory and practical.
13. Diagnose the gaps and misconception in learning Physics and take remedial measures.

Contents

Unit-I: Nature, Scope and Objectives

1. Nature of Science Physics as a fundamental science.
2. Main milestones in the development in Biology.

3. Contribution of Indian Physicists, C.V. Raman, M.N. Saha, K.S. Krishnan, Narlokar, J.C. Bose, S.N. Bose, H.J. Bhabha and S. Chandra Shekhar
4. Objectives and values of teaching Physics at Secondary/Senior Secondary level.

Unit-II: Curriculum and Planning

1. Principles of selection and organization of course, content & experiences for senior secondary level Physics curriculum and characteristics for senior secondary level. Physics curriculum and characteristics of good Physics curriculum.
2. Correlation of Physics with other school subjects and its role in daily life.
3. Writing of objectives in behavioral terms, content analysis, developing yearly unit and daily lesson plan and concept mapping.
4. Teacher's role in planning for developing scientific attitude and creativity among students and for training them in scientific method.

Unit-III: Methods and approaches

1. Lecture method, Demonstration method, project method, problem solving method and assignment method.
2. Heuristic approach, Inductive deductive approach.
3. Out of class activities like science club, science fairs and field trips.

Unit-IV: Instructional Support System

1. Physics Lab: Planning, Equipping and Organizing practical work.
2. State & National Level Institutions & Laboratories (DST, NPL, ISRO, CEERI, RAPS and BARC).
3. Community resources like Science Centres /

museums, planetarium and solar observatory.

4. Multisensory aids- charts, models, specimen, bulletin-boards, flannel board, Transparencies, slides, projector, Overhead Projector, Radio, T.V., Computer.
5. Text books- characteristics of a good text book and evaluation of text book.

Unit-V: Evaluation

1. Type of test items and their construction
2. Preparation of Blue Print & Achievement Test.
3. Diagnostic testing and remedial teaching in Physics.
4. Evaluation of practical work.

Sessional Work (20 Marks)

(1) One test of 10 Marks

(2) Any one of the following 10 Marks:

1. Case study of any one Senior Secondary Lab of Physics.
2. Description of design of any improvised apparatus.
3. Planning an out of class activity to use local re sources to teach Physics.
4. Life sketch and contribution of one Physicist.
5. Preparation of scrap book containing original science (scientific cartoon) / stories / latest articles/feature/play/interview report useful for teaching Physics.

MATHEMATICS

Objective:- To enable student Teacher to:

1. To enable pupil teachers to understand and appreciate mathematical structure and their isomorphism with physical realities.
2. To improve their understanding of the basic concepts and make them appreciate their

unifying strength and wide of applicability.

3. To enable the student teacher, to have a clear idea of the plan of mathematics in school curriculum and of its relation with the objectives of general education.
4. To enable them to analyze the school syllabus of mathematics in relation to its objectives.
5. To enable them to see meaningfulness of the school mathematics programme in relation to life situations.
6. To give them competence in teaching different topics effectively.
7. To enable them to check up the results of their teaching against the objectives and their valid criteria.
8. To enable them to devise and suitable use aids for teaching so that it may result in better learning.
9. To enable them to use various techniques and practices in the classroom to make pupil learning lasting and meaningful.
10. To enable them to organize co-curricular activities in mathematics.
11. To enable them to enrich and refresh their knowledge of content in Mathematics.

Notes:

1. The questions on the units such as methods of teaching aids in teaching. Unit & lesson planning, objective and evaluation will be based on the Unit I.
2. The question on unit I will not be asked directly without any reference to Methodology.
3. The unit I may be discussed by adopting any suitable methodology such as use of library as

signments, discussions etc.

Contents

Unit-I

Diagnostic, Remedial and Enrichment programmes with respect to the following content areas:

(a) Set theory and Mathematical structures- sets, Relations and Functions, An elementary idea of Boolian algebra and numbers with different bases.

(b) Statistics: Graphical representation of statistical data. Measures of central tendency, dispersion and coefficient of correlation.

(c) Axiomatic development of Geometry: Concepts of line, ray, line segment, angle, triangle, interior and exterior of angles and triangles. Concepts of equality congruency and similarity.

(d) Any other topic from the prevailing syllabi at upper primary secondary & higher secondary stages in the state.

Unit-II

(a) The nature of Mathematics, Importance of Mathematics in the Secondary school Curriculum, History of Mathematics and contribution of Indian Mathematicians, Meaning of Mathematics according to the following schools of thought: (i) Logistic (ii) Institutionists (iii) Formalists.

(b) Aims and Objectives of teaching mathematics. Introduction to Blooms Taxonomy of education & educational objectives in relation to knowledge, understanding, application and skills.

Unit-III

(a) The Mathematics, Curriculum, Strategy and Principles of curriculum construction for the

secondary level, Recent trends in mathematics curriculum, Critical evaluation of the existing mathematics curriculum, Critical evaluation of existing mathematics curriculum prescribed by Rajasthan Board of Secondary Education at different levels.

(b) Unit and Lesson Planning.

(c) Methods of teaching:-

(i) Analytic and Synthetic
(ii) Inductive Deductive
(iii) Demonstration: Laboratory
(iv) Heuristic and Project
(v) Problem Solving.

Unit-IV: Aids in Teaching and their proper use:

(a) Mathematics room (Planning & Equipment)

(b) Text Books.

(c) Audio Visual aids, film strips, field trips & excursion Mathematics Association, work-book.

(d) The Mathematics Teacher- Academic & professiona preparation.

(e) Journal and reference books on Mathematics teaching.

Unit-V: Evaluation in Mathematics

(a) Concept of evaluation, distinction between evaluation and examination, its characteristics and functions.

(b) Formulation of objective, learning experience.

(c) Preparation and use of tests for evaluation such as achievement tests, diagnostic test, aptitude tests, observation schedule etc.

Sessional Work (20 Marks)

(1) One test of 10 Marks

(2) Any one of the following 10 Marks:

1. Make a Diagnostic, Remedial and enrichment

programmes of set theory and mathematical structures.

2. Preparation & construction of an achievement test based on any unit.
3. Preparation of a lesson plan based on any Innovative method.
4. Preparation of 10 frames of linear or Branching type programmes on any topic of Mathematics.

PAPER VII: COMPUTER LITERACY & EDUCATION APPLICATION

Objectives:

1. The student teachers will have understanding of Computer System and its working.
2. The student teachers will be able to understand and operate Windows.
3. The student will develop skill in using Windows and the applications.
4. The student will be able to understand the Educational Applications of Computer.
5. The students will develop positive attitude towards handling of computers.
6. The student will develop skill in the use of Internet.

Course Content

Unit-I

Computer Fundamentals

1. General awareness about the functioning of Computer.

(a) Characteristics and uses of Computer
(b) Block diagram of Computer.
(c) Classification of Computer.

2. Concept of hardware and software.
3. Input/Output devices keyboard, mouse, monitor, printer.
4. Storage devices (Secondary)- Hard Disk, Floppy Disk, CD-ROM, ZIP.
5. Computer Memory and its units- RAM, ROM, bit and byte.

Unit-II

Operating System

1. Basic features of Windows
2. 'Windows' and its accessories
   (a) Explorer (b) File Manager,
   (c) Managing Printing
3. MS-Office
   (a) MS-Word-Text Management
   (b) MS-Excel-To support database & graphics.
   (c) POWER POINT-Preparation of Slides.

Unit-III

Internet and Multimedia

1. Server, Modem, E-Mail, Internet surfing for educational purpose websites, Search Engineers.
2. Concept of Multimedia & its educational uses.

Unit-IV

1. **Computer as Teaching Machine:**

(a) Computer Aided Instruction (CAI)- Concept and modes.
(b) Concept of other items like CMI (Computer Managed Instructions), CBI (Computer Based Instructions), CALT (Computer Assisted Learning and Teaching).

Unit-V

1. Information Technology & Computer (Concept, role, impact on education system.)
2. Role of Computer in Education System (e.g. Library Management, Educational Management

and research School management, evaluation distance education, Education of special children etc.

Practical and Sessional Work (any two)

1. Preparation of Mark-Sheet and Question Bank.
2. Preparation of instructional material/course ware (based on content analysis to be used as transparencies/charts using MS-Word/Power Point.
3. Preparation of marks register of a class and its statistical analysis and graphical presentation.

Evaluation

1. Theory paper of 50 marks.
2. Practical evaluation

Practical exam	- 20 marks
Submission of report	- 10 marks+(one test 10 marks).
Viva	- 10 marks
Total	- 50 Marks.

PAPER VIII

EDUCATIONAL AND VOCATIONAL GUIDANCE

Objectives: To enable the student teachers to:

1. Understand the basic Concept, Nature and Scope of educational Vocational Guidance.
2. Understand the Aims & Objectives of Educational and Vocational Guidance.
3. Understand the Importance of Educational & Vocational Guidance in the present national scenario.
2. Understand the Role & Responsibilities of guidance workers in School.
3. Understand the Nature and Types of guidance services with reference to School Education.

Course Content

Unit-I Concept, Nature and Scope of Guidance

Importance of guidance in the lives of individuals, meaning of guidance. Distinction between guidance and counseling.

Unit-II Importance of Guidance

Philosophy and Aims of Guidance, Importance of Guidance in Schools or individuals and for society.

Unit-III Areas of Guidance

Areas of Guidance, Educational Guidance, Vocational Guidance, Personal Guidance, Development Guidance, Psychology of Careers, Concept of Vocational development and Career Patterns.

Unit-IV Guidance in Present Control

Guidance Implications in the current Indian Scenario, Education and Guidance Democracy and Guidance, Individual Difference and Guidance.

Unit-V Guidance Services

Introduction to Guidance Services: Individual Inventory Service, Cumulative Record, Information Service, Follow up service, Group Guidance Service, Guidance in the School Programme Role & Responsibilities of Guidance worker in Schools.

Sessional Work (20 Marks)

(1) One test of 10 Marks

(2) Any one of the following: (10 Marks)

1. Evaluation an Educational Programme Guidance and Curriculum Approach.
2. Write one essay and two abstracts.

MEASUREMENT AND EVALUATION

Objectives: Student Teacher will be able to understand:

1. The meaning of Measurement and Evaluation.
2. Recall the relationship between Measurement and Evaluation.
3. The preparation of objective type test items.

4. The meaning of Intelligence, Interest, Personality and Creativity.
5. Development of standardized and teacher made test.
6. Analyze the statistical methods.
7. Use techniques of Evaluation.

Contents

Unit-I

(a) Meaning of Measurement and Evaluation.
(b) Relationship between Measurement and Evaluation.
(c) Significance of Educational Measurement and Evaluation.
(d) Techniques of Evaluation.

Unit-II

(a) Examination and how to improve it.
(b) Preparation of objective type test items.
(c) Item analysis.

Unit-III

(a) Measurement of Intelligence.
(b) Measurement of Interest.
(c) Measurement of Personality.
(d) Measurement of Creativity.

Unit-IV

(a) Standardized versus Teacher made test.
(b) Constructing an achievement test.
(c) Characteristic of Good Evaluation System.
(a) Reliability (b) Validity (c) Objectivity
(d) Comparability (e) Practicability.

Unit-V

(c) Frequency distribution.
(b) Measures of Central Tendency
(c) Standard Deviation.

(d) Co-efficient of co-relation: Product Moment and Rank Difference.

Sessional Work (20 Marks)

(1) One test of 10 Marks
(2) Any one of the following: (10 Marks)
- A detailed essay on any aspect of measurement and Evaluation.
- Construction administration and item analysis of a test in any school subject.

ENVIRONMENTAL EDUCATION

Objectives: To enable the pupil Teachers to:

1. Understand the concept of Environment and the problems concerning Environment through multi disciplinary approach.
2. Develop Environmental consciousness in their students.
3. Develop the skills of planning and organizing Ecological activities in the schools so that the children can be equipped to play their role in protection and enrichment of environment.
4. Use different techniques and material for the effective dissemination of Environmental information.
5. Conduct local surveys, arrange field trips and Environmental games and related activities.

Contents

Unit-I

1. Concept of Environment.
2. Concept of Ecology, Ecosystem, Components of Ecosystem and interdependence.
3. Relationship of man and Environment.
4. Personal & family responsibility about the Environment.

Unit-II

Problems of Modern Civilization:

1. Population Explosion
2. Pollutions: Air, Water, Noise, Waste and Cultural.
3. Deletion of the Natural resources: Causes and measures for conservation of forests and wild life.
3. Water, energy and soil management.

Unit-III

1. Mecning, Objective, Importance and Philosophy in Environmental education.
2. Scope of environmental education-Multi-disciplinary approach correlation with other school subjects.
3. Environment Education as a subject, its curriculum at different levels.

Unit-IV

1. Methods and Approaches: Group discussion, project, problem solving, observation, field-trips/ excursion, activity method, Games and simulation, puppet, lecture-demonstration, Ecology club, Ecology-laboratory, Library and publications.
2. Role of Mass-Media Films & Audio-Visual material in Environmental education.

Unit-V

1. Role of different agencies: UNEP, W.W.F. Friends of trees, N.G.O.s and Government organization.

Sessional Work (20 Marks)

(1) One test of 10 Marks
(2) Any one of the following: (10 Marks)

Select one from each section:

Section-A (Each 5 Marks-10 Marks)

1. Prepare a scrap-book of an Environment articles and news.
2. Preparation of maps or charts or models of Transparencies related to Environmental issues.
3. Study any Environment problem and write a report of the same.

4. Find out Environment friendly or degradable products and prepare a list.
5. Study the role of any local NGO.
6. Planning of an out of class activity / Games / simulation related to Environment.

Section-B

Prepare an article on any one of the following:-

1. Concept of Eco-system and Interdependency.
2. Green house effect Global warming.
3. Depletion of Ozone Layer and Acid rain.
4. Acts related to conservation of Environment.

POPULATION EDUCATION

Objectives: Students will be able to:

1. Understand the Meaning, Scope and the Importance of Population education.
2. Understand the Meaning, Factors and Impact of standard of life.
3. Understand the Need and Means of Population Control.
4. Understand the Role of different agencies in the Population Education.

Contents

Unit-I

Population Education: Meaning and definition, Scope, Need and Importance of Population Education, Role and purpose of Population Education as integral part of education.

Population of India in a world perspective: Concept of population, Theories of population, Under Population, Growth, Distribution and density of population, Over Population with demographic data of india in world perspective.

Unit-II

Standard of Living and the Quality of Life: Food and

nutrition, health-hygiene, Sanitation, Housing, Clothing, Education travel, leisure, Employment, Income, Consumption levels, Efficiency and output, Social cultural and spiritual enlightenment, Ethics aesthetics, Different aspect and their inter relationship with example and illustration from India and abroad, Population and India's Development Endeavor, population growth and production with the special reference to the National Income. The impact of the development of family life on society, Culture and Personality.

Unit-III

Population Control and Planning: India's Population Policy, The role of society and the formation of public opinion favorable for Population Control, Role and the responsibility of family and individual, A small family unit for healthier, happier and better homes, improved standard of living, better quality of life.

Population Equilibrium: Emergency and long measures role of Population Education.

Unit-IV

Emergence of Population Education: Action taken for Population Education (Historical Background), Introduction of Population Education in School, Colleges and teacher education institution, Role of Different Agencies and Organization, Home, School, Community, Government (Population policies and programmed voluntary Agencies; Mass media.

Unit-V

Teacher of Population Education: His Preparation, qualities; Role of teacher education, Education Activities for Population Education; Extension lectures, Debates, Survey, games, Exhibitions, Dramas,

Meeting with parents, Preparation of aids, etc.

Sessional Work (20 Marks)

(1) One test of 10 Marks

(2) Any one of the following: (10 Marks)

1. Study the causes of population problem and write a report of the same.
2. Write one essay on any topic of population.
3. Write any two abstracts related to population education.

ELEMENTARY EDUCATION

Objectives: Student Teacher will be able:

1. To understand the concept, scope and the objectives of elemeniary education.
2. To recall constitutional provision and understand the efforts made by different agencies for the expansion of Elementary Education.
3. To understand the ideology and experiments of Mahatma Gandhi and Giju Bhai in the field of elementary education.
4. To understand the child and development of school-community relationship.
5. To use the teaching methods in the elementary school classrooms.
6. To prepare and use teaching-learning material in the classrooms.
7. To understand and use techniques of evaluation.
8. To understand and analyze the significant problems and related to elementary education.

CONTENTS : THEORY

Unit-I

(a) Elementary Education: Concept, Scope and Objectives.

(b) Constitutional provisions and efforts made

independence.

Unit-II

(a) Status of UEE (Universalization of Elementary Education) in Rajasthan.

(b) Role of State, Local bodies and NGOs in the expansion of UEE.

(c) Experiments and Schemes (DPEP, Gurumitra, Lok Jumbish, Shiksha Karmi, Saraswati Yojna, Sarva Shiksha Abhiyan, Rajeev Gandhi Pathshala, Para Teachers etc.)

Unit-III

(a) Experiments in elementary education by Mahatma Gandhi and Giju Bhai.

(b) Training, Service conditions and responsibilities of elementary school teachers.

(c) Role of elementary school teacher in developing school-community relationship.

Unit-IV

(a) Objectives and methods of teaching language, environmental studies Mathematics and SUPW.

(b) Methods of Teaching: (i) Story telling (ii) Activity (iii) Play-way (iv) Multi-subject teaching.

(c) Continuous and Comprehensive evaluation.

Unit-V

(a) Problems in Elementary Education (Status, Causes and suggestions).

(i) Quality V/S Quantity

(ii) Dropouts

(iii) Disparity in enrolment of girls and groups based on Socio-economic states and categories (ST/SC etc.)

(b) Administration and supervision of elementary schools.

Sessional Work (20 Marks)

(1) One test of 10 Marks

(2) Any one of the following: (10 Marks)

1. Observation of learning process (five periods of any one elementary class).
2. Preparation of instructional material on any topic/concept in any of the two subjects.
3. Planning, Organization and Reporting of one play-way class.

COMPARATIVE STUDY OF EDUCATION: INDIA & ABROAD

Objectives: Student Teacher will be able:

1. To help the potential leaders to appreciate how education in a country is shaped by a number of factors.
2. To help them perceive the wide variety of education tasks and arrangements in different countries.
3. To enable them to understand the merits and demerits of Indian education in comparison with other countries.
4. To enable them to understand the educational administration of India & abroad.

CONTENTS : THEORY

Unit-I

1. The meaning, scope, need and purpose of the comparative education.
2. Factors determining the theory and practice of education in a country; geographical economics, cultural, sociological linguistics, religious and scientific.

Unit-II

Approached to Comparative Education - Philosophical, Sociological, Historical, Statistical. Principles underlying the organization, curricula and syllabi, text books, examinations and guidance

with reference to:-

(a) Pre-Primary Education

(b) Primary Education

Unit-III

Study of the following branches of Education:

a. **Secondary Education-** It's extent manner and criteria of selection of pupils for it, curriculum examination, guidance programme in relation to vocational preparation & higher education, teachers and their training control and finance in USA, UK, Japan and India.

b. Higher Educationist extent, intellectual & social contents, length of studies, institutions, organizational structure, Universities in USA, UK, Japan and India.

Unit-IV

Special Education:- Meaning, need and importance. Comparative study of Education of the Handicapped, gifted minorities and social groups, Remedial provisions, The medium of instruction.

Unit-V

Comparative study of Educational Administration of India, UK, Russia & Japan.

Sessional Work (20 Marks)

(1) One test of 10 Marks

(2) Any one of the following: (10 Marks)

1. A detailed essay on Educational Administration of India
2. A detailed essay on Problems of education in India with comparison to UK, USA.
3. A detailed essay on comparative education.