MT- 10 PHYSICAL SCIENCE EDUCATION

Unit – 1 Physical Science subject

1.1 Nature and Need of physical science as a subject
1.2 Impact of modern science
1.3 Knowledge of eminent scientist with special reference to India
1.4 Place of physical science in school
1.5 Importance of physical science as a discipline in school

Unit – 2 Methods of teaching of Physical science

2.1 Aims and objective of the teaching of physical science
2.2 Maxims of teaching
2.3 Methods of teaching mathematics
1. Activity method
2. Problem solving method
3. Experimental method
4. Science fairs
5. Projects

Unit – 3 Techniques and models of teaching in Physical science

3.1 Planning of teaching
1. Term teaching
2. Content analysis
3. Task analysis
4. Team teaching and seminar presentation
5. Technology based technique

3.2 Use of Piagetian, Bruneilan and Gagnesian models in developing science teaching plans

3.3 Preparation of teaching aids and innovations in teaching.

Unit – 4 Pedagogical analysis of Physical science

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. General science approach
4. Disciplinary approach

Unit – 5 Content cum methodology in teaching of Physical science

5.1 Structure of physical science 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 Use of community resources and local centers of scientific study

Unit – 6 Evaluation of Physical science

6.1 Importance of evaluation
6.2 Evaluation –
5. Cognitive, affective, psychomotor
6. Process and product outcome
7. Scientific attitude
8. Reasoning and habit

6.3 Use of tools and technique of evaluation
1. Achievement test
2. Diagnostic test
3. Check test

6.4 Remedial teaching

Online evaluation

REFERENCE BOOKS

1- Science Teaching in School – Das, R.C.
2- Teaching physical science in secondary school – Gupta, S.K.
3- Teaching of School Physics – Lewis, J.
4- Science teaching in School – Murrey, J.
5- Methods and materials for teaching physical sciences – Richadson and Cohan.
6- Towards more effective science – Anderson, H.O. et al