

MT- 11 BIOLOGICAL SCIENCE EDUCATION

Unit – 1 Biology subject

- 1.1 Nature of biological science as a subject
- 1.2 Impact of developments in modern biological science
- 1.3 Fundamental concept of extra-terrestrial life
- 1.4 Globalization and biology
- 1.5 Recent discoveries in life sciences

Unit – 2 Methods of teaching of Physical science

- 2.1 Aims and objective of the teaching of bioscience
- 2.2 Maxims of teaching
- 2.3 Methods of teaching bioscience
 1. Lecture method
 2. Model method
 3. Experimental method
 4. Science fairs
 5. Use of computer and internet
 6. Field survey
 7. Direct observation method

Unit – 3 Techniques and models of teaching in bioscience

- 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 Non formal approaches in teaching of bioscience
- 3.3 Life existing around the school and home, science club, science museum, aquarium etc

Unit – 4 Pedagogical analysis of bioscience

- 4.1 Concept of pedagogical analysis
- 4.2 Approaches for pedagogical analysis, concept and importance
 1. Core element and values

2. Observation and methodology
3. General science approach
4. Ecological and environmental approach

Unit – 5 Content cum methodology in teaching of bioscience

- 5.1 Structure of bioscience as a subject
- 5.2 Curriculum- principles for construction for various grades and age
- 5.3 Approaches for curricular organization- concentric, topical, process and integrated
- 5.4 Analysis of syllabus for one standard (BSEB/ CBSE/ ICSE)
- 5.5 Analysis of textbook
- 5-6 Importance of curriculum in science teaching.
- 5-7 Preparation of project

Unit – 6 Evaluation of bioscience

- 6.1 Importance of evaluation
- 6.3 Evaluation –
 1. Working – product evaluation
 2. Cognitive outcome
 3. Scientific attitude
 4. 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
- 6.5 Online evaluation

REFERENCE BOOKS

- 1- Teaching of Science – Sharma and Sharma Nair.
- 2- Teaching of Life Sciences – Sood, J.K.
- 3- Biology as Enquiry : A book of teaching methods – Voss Burton, E and Brown, S.B.
- 4- Science Education – Dr. Borse.
- 5- Teaching of Science – Ghansham Das.
- 6- Methods and materials for teaching the Biological Sciences – Miller David F and Blaydes, G.W.