

## Competency Statements: Biology

### Standard XI

#### Competency Statements

After studying the content in Textbook student ...

1. Analyse basic characteristics of living and non-living.
2. Collect and analyse useful data by observing diversity of living organisms using different tools.
3. Describe plants and animals in the surrounding on scientific basic and classify them using taxonomic hierarchy.
4. Develop hobbies by watching and collecting the things (livings) and their conservation using databases.
5. Classify different organisms based on cell structure, body organisation, mode of nutrition etc.
6. Compare and analyse similarities and differences along with phylogeny amongst different groups of organisms.
7. Aware about cellular organisms their interactions economic importance.
8. Recognize, analyse and compare structural similarities and differences and progressive evolutionary changes in different plants and animals.
9. Explain and draw the structure and functions of different cell organelles.
10. Elaborate the role of nucleus in heredity and controlling characters with structure of chromosome.
11. Compare cell division process and know their role in life cycle of organisms.
12. Analyse and specify different biomolecules of cell with their role in structural and functional aspect of cell.
13. Explain basic morphology of dominant plant group of this era i.e. Angiosperms.
14. Compare morphological features of different plant parts in different plant families.
15. Draw floral parts and floral diagram.
16. Identify economic importance of Angiosperms with respect to fruit and seeds.
17. Compare morphological feature of two major classes of Angiosperms.
18. Explain different types of tissues in plants and reasons for growth viz. primary and secondary.
19. Analyse basic differences in anatomy of different plants like dicot and monocots with respect to root, stem and leaf.
20. Elaborate different animal tissues and their role.
21. Explain and draw mechanisms of different physiological process like digestion circulation, excretion, control and coordination.
22. Collect the idea of development of different sense organs.
23. Review the contribution of different scientists in systematics and taxonomy.

24. Explain the scientific reasons behind the various physiological activities based on relationship.
25. Use and repair the equipment based on energy.
26. Understand the relationship between chemical reactions of molecules in daily life and analyse them to solve various problems.
27. Review the contribution made by different workers.
28. Explain role of environment... by conservation of environment various laws and rules.
29. Plan and implement programs about conservation of environment.
30. Explain the importance of green energy and save energy in daily life.
31. Explain the need and importance of various physiological processes.
32. Explain the structural modifications, observed in various living organisms to carry out various physiological processes.
33. Observe and correlate the histological structure of various organs with their function.
34. Comprehend mechanisms by which these physiological processes help maintain homeostasis.
35. Create memory maps, flow charts to depict major events in these processes.
36. Develop insight about connection between life style/habits and physiological disorders.
37. Collect information about latest diagnostic tools and treatments for various physiological disorders.
38. Critically analyse given situational data and come up with rationale of possible physiological disorders/suggest proper remedial measures.
39. Perform various analytical tests to detect presence of certain components in food materials/waste products.

## Competency Statements: Biology

### Standard XII

#### Competency Statements

After studying the content in Textbook student ...

1. Differentiate various types of reproduction.
2. Explain types in sexual reproduction.
3. Explain structure and function of genetic material (chromosomes, genes)
4. Sort out different types of seeds.
5. Elaborate the process of human embryo development.
6. Appreciate contribution of various pollinators.
7. Collects the information about amniocentesis and appreciate about role of genetic counselling.
8. Explain endemism/Basic law of Genetics.
9. Explain structure and function of genetic Materials.
10. Differentiate types of linkages and interpret Mendelism.
11. Believe and explain in process of chemical evolution with experiment proof.
12. Enumerate role of connecting link in evolutions.
13. Understand and explain the immunological basis of various diseases and ways and means to prevent and cure them.
14. Identify and elaborate the various types and effects of addiction.
15. Suggest remedial measures for improvement of social health.
16. Enlist the different types of new hybrid varieties of plant development for agriculture and research.
17. Decides and suggest career opportunities in the fields of dairy, poultry and other field.
18. Explain role of microbes in upcoming fields as biocontrol agents, sewage treatment, Nanotechnology.
19. Explain principle, processes and applications of Biotechnology.
20. Elaborate need of Biotechnology.
21. Recognize different steps in r-DNA technology.
22. Appreciate contribution of Biotechnology in different fields of Trans genesis, (plant and animal) Bioenergy, vaccines and Medicine.
23. Arrange steps of food chain / web in sequence
24. Appreciates and explain the importance of habitat conservations.
25. Elaborate the value of conservation of nature.
26. Compare the success of various case studies on conservation in India.
27. Design a project on conservation issue.