



## ARS (Microbiology)

1. Discuss the basic scientific facts, concepts, principles and techniques.
2. Describe the processes and mechanisms supporting the structure and function of microorganisms.
3. Illustrate the terminology, nomenclature and classification systems related to different living organisms.
4. Review the theories and methods applied for interpreting and analyzing data related to microbiology.
5. Outline the developmental progress of microbiology-related knowledge.
6. Discuss the biology of living microorganisms at the molecular, cellular, organism, population, and ecosystem levels.
7. Define the concepts of microbiology disciplines such as bacteriology, mycology, phycology, virology, molecular biology, microbial genetics, physiology, ecology, biotechnology & bioinformatics.
8. Identify the scientific background of practical application within the bioscience-based industries and employers.
9. Recognize the biological significance of microbes in ecosystem equilibrium and conservation.
10. Differentiate between microbiology-related theories and assess their concepts and principles.
11. Analyze, synthesize, assess and interpret qualitatively and quantitatively scientific relevant data.
12. Develop lines of argument and appropriate judgments in accordance with scientific theories and concepts.
13. Postulate and deduce mechanisms and procedures to handle scientific problems.
14. Construct several related and integrated information to confirm, make evidence and test hypotheses.



15. Apply knowledge of scientific theories which underpin studies microbiology, for example the relationship between genes and proteins or between organisms and their environment and the ways in which evolutionary processes have shaped form and function.
16. Evaluate contemporary social and ethical issues related to biology.
17. Formulate microbiology data and select the proper mechanism for their setting within a theoretical framework.
18. Plan, design, process and report on the investigated microbiology data, using appropriate techniques and considering scientific guidance.
19. Apply scientific techniques and tools considering scientific ethics.
20. Solve scientific and technical problems using a range of formats and approaches.
21. Identify and criticize the different methods used in addressing subject related issues.
22. Employ statistical analyses and computational tools to analyze and interpret experimental data in terms of theories relevant to microbiology.
23. Collect records and analyze data in microbiology using appropriate techniques in the field and laboratory.
24. Use information and communication technology effectively.
25. Identify roles and responsibilities, and their performing manner.
26. Think independently, set tasks and solve problems on a scientific basics.
27. Work in groups effectively; manage time, collaborate and communicate with others positively.
28. Consider community linked problems, ethics and traditions.
29. Acquire self- and long life-learning.
30. Apply scientific models, systems, and tools effectively.
31. Dealing with scientific patents considering property right.
32. Exhibit the sense of beauty and neatness.