

Exam. Code : 210002

Subject Code : 5438

M.Sc. Botany 2nd Semester
GENERAL MICROBIOLOGY
Paper-BOTC-523

Time Allowed—3 Hours] [Maximum Marks—50

Note :— Section-A is compulsory and answer to any question should not exceed four lines. Attempt any **seven** questions from Section-B, answer to these questions should not exceed **two** pages and attempt any **three** questions from Section-C answer to these questions should not exceed **four** pages.

SECTION-A

Explain short notes on the following :

1. Virulence
2. Transformation
3. Bioremediation
4. Rabies
5. Natural culture media
6. Vaccine

7. Human insulin
8. Osmotic pressure 1×8=8

SECTION-B

1. What do you understand by Human Growth Hormone ?
How it can be produced industrially ?
2. Give an account of protocol for the industrial production of an organic acid.
3. What are the impacts of discharge of raw sewage on public health ?
4. Define bioaerosol. Briefly describe the procedure for the collection of bioaerosols.
5. Discuss the methodology for the microbial production of genetically engineered vaccine.
6. Discuss various modes of nutrition in bacteria.
7. Discuss various physical agents for the control of microorganisms.
8. Define airborne human pathogens. How these can be controlled ?
9. Give an account of various techniques for the purification of microorganisms.

10. Discuss the process of viral infection with special reference to TMV. 3×7=21

SECTION-C

1. Describe various flavouring agents of microbial origin used in different foods. How they can be produced industrially using microorganisms ?
2. Give an account of classification and nomenclature of bacteria as per Bergey's Manual citing characteristics of each group.
3. Compare and contrast primary, secondary and tertiary waste water treatments. Discuss their ecological impact.
4. Elaborate the role of toxins and extracellular enzymes in pathogenicity of disease causing bacteria.
5. Describe the characteristics of antimicrobial chemical agents. Comment upon the chemical nature, mechanism of action and mode of application of phenolics and alcohol.

7×3=21