

B. Sc. Semester-V (Honours) Examinations-2020

Subject- Microbiology

Paper- DSE-1 (Microbes in Sustainable Agriculture and Development) (Theory)

F.M.-40

Time- 2 hrs.

Answer *any eight* questions from the following

5 x 8 = 40

1. What are PGPRs? Write their application in agriculture.
2. Discuss symbiotic association of microbes and plants.
3. Write the application of phosphate solubilizing bacteria in agriculture.
4. Discuss the role of microorganisms as bio-control agents against microbial plant pathogens.
5. Write a short note on Bt-cotton.
6. Write a short note on non-symbiotic nitrogen fixing bacteria.
7. What is biogas? Write its advantages over conventional fuels.
8. What is silage? Briefly mention its advantages.
9. Write a short note on microbial activity in green house gas production.
10. What is VAM? Write its application.

B. Sc. Semester-V (Honours) Examinations-2020
Subject- Microbiology

Paper- DSE 1 OR (Bioinformatics)(Theory)

Time- 2 hrs.

Answer *any eight* questions from the following

5 x 8 = 40

1. What is DBMS and mention its application? Write down the full form of SFTP and SCP.
2. Give one example each of protein structure, gene expression and metabolic pathway database. Write any two features of Genbank format.
3. Define local sequence alignment with a diagram. Differentiate between local and global sequence alignment.
4. What do you mean by pair-wise sequence alignment? State the importance of multiple sequence alignment. Write down the full form of BLASTP.
5. Write down the importance of scoring matrices in sequence alignment. Differentiate between PAM and BLOSUM.
6. Differentiate between rooted and un-rooted phylogenetic tree. Define the term root, node and branch of a phylogenetic tree.
7. What is binary phylogenetic tree? State briefly on maximum likelihood method of phylogenetic analysis.
8. What is genome? Write down the importance of 2D Gel electrophoresis.
9. Describe the major features of *E coli* genome. What is whole genome sequence?
10. Define fold and domain of a protein structure. Write briefly on Ramachandran Plot.