PD– 523

M.Sc. MICROBIOLOGY (FOURTH SEMESTER)
Examination June - 2021
Compulsory/Optional
Paper-IV
Name/Titel of the Paper: COMPUTER FUNDAMENTALS & RESEARCH TECHNIQUES

Time: Three Hours]   [Maximum Marks: 80

[Minimum Pass Marks: 29

Note: Answer from Both the Section as Directed. The figures in the right hand margin indicate marks.

Section -A

1. Answer the following objective type question.   1X10
   a. Differentiate between by spreadsheet?
   b. What do you mean by spreadsheet?
   c. At which instance we commit Type – I Error during statistical analysis?
   d. How dispersion of a data set is determined?
   e. What do you mean by literature survey?
   f. What we provide under "illustrations" of a research article?
   g. Define isoelectric point.
   h. Mention two important properties of Whatman filter Paper -1.
   i. What are registers of a Computer ?
   j. Why silica gel popularly in TLC ?

2. Answer the following question briefs   2x5
   a. Discuss tool pack of Microsoft Excel.
   b. What do you mean by central tendency of India?
   c. Describe digenesis of carbonate rocbis.
   d. How total magnification of a compound microscope is calculated?
   e. How activates of enzymes are precisely determined?

Section -B

Answer the following short answer type question   15X4
UNIT-I

3. Write short notes on;
   a. High level languages of computer
   b. Uses of internet in microbiological research.
                        OR
   a. Explain biological search engines with two suitable examples.
   b. Microsoft Power Point.

UNIT-II

4. In an ecological study, data recorded on fresh and dry weights for sample of an experimental material. Calculate the correlation value for the two categories.

Fresh Wt	6	10	12	4	15	12	14	8	7	5
Dry Wt	3	3	4	1	5	3	3	2	2	2

OR

Calculate standard deviation of the below given data recorded on protein consumption per day (g) in classes and number of families (f)

Classes	11-20	21-30	31-40	41-50	51-60
f	5	4	6	7	9

UNIT-III

5. Write short notes on;
   a. Primary data Vs Secondary data.
   b. Different steps to be followed during perusing a good research investigation.

OR

Write short notes on;
   a. Research article Vs Review article.
   b. Discuss components of a good research project proposal to be submitted to a funding agency for financial support.

UNIT-IV

6. Discuss working principle of GC-MS and its application in moderm microbiological research.

OR

Write short notes on;
   a. Immunoeletrophoresis
   b. Ultracentrifugation