M. Sc. 2nd Semester Examination, 2025

MICROBIOLOGY

(Biomathematics and Bioinformatics)

PAPER – MCB-206

Full Marks : 25

Time : 1 hour

Answer all questions

The figures in the right hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

GROUP—A

Answer any **two** questions from the following :

2 × 2

1. Differentiate between "population" and 'population's sample' with example.

2. Normal values are what type of statistical measure and why.

3. Define relationship variance and standard deviation.

4. State the importance of statistics in micro-biological studies.

GROUP—B

Answer any two questions of the following :

4×2

5. Compute the Median and Standard deviation of the following scores

Class intervals : 50-54 55-59 60-64 65-69 70-74

Frequencies :   09   5   20   08   10

6. Discuss the different types of variables with examples on the basis of properties and experiment.

(*Continued*)

7. Define sampling and state different types of sampling methods with example.

8. Sample data sets for bacterial growth (cfu) are 50, 55, 60, 65, 58 and population means (μ) is 50. Calculate the computed 't' for one sample t test.

GROUP – C

Answer any **one** of the following : 8×1

9. Write the different grade of correlation. Compute Correlation of coefficient of the following colony number (cfu) & temperature (°C) of the 05 culture samples media. $2 + 6$

Sl no of Babies	1	2	3	4	5
Colony no. (cfu) (X)	59	85	90	80	70
Temperature of the Media(Y)	39	95	50	60	40

10. Why ANOVA is more powerful then t-test ? Classify the different types of ANOVA with examples. Write the computation formulae of sum of square, variance for total, between and within the three group's scores with computed F value.   2 + 2 + 4

[Internal Assessment — 5 Marks]

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