Roll No.

Total No. of Pages : 02

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## M.Sc (Medical Microbiology) (Sem.-3) BIOSTATISTICS Subject Code : MMB-302-21 M.Code : 92526 Date of Examination : 14-12-22

Time: 3 Hrs.

Max. Marks : 70

### INSTRUCTIONS TO CANDIDATES :

- 1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- 2. SECTION-B contains EIGHT questions carrying FIVE marks each and students have to attempt any SIX questions.
- 3. SECTION-C will comprise of two compulsory questions with internal choice in both these questions. Each question carries TEN marks.

#### **SECTION-A**

#### 1. Attempt the following :

- a) Define biostatistics.
- b) What do you mean by hypothesis?
- c) What do you mean by standard deviation?
- d) Define probability.
- e) Define F test
- f) Calculate mean, median and mode for 18, 14, 24, 18, 16, 20, 30, 16, 20, 16
- g) Define correlation.
- h) Define law of additivity.
- i) Define inter quartile range.
- j) What do you mean by correlation?

#### **SECTION-B**

- 2. Explain in detail linear regression.
- 3. Define variables and explain their role in statistics.
- 4. Define research design. Give its classification.
- 5. Define report writing involving techniques and precautions.
- 6. Write a note on objectives of research.
- 7. Scientists want to evaluate a new molecule against IQ score. In population average mean IQ score ( $\mu$ ) = 180, Sample size they took (n) = 75, Mean score of sample size ( $\bar{x}$ ) = 120, Standard Deviation (S) = 14 with an Alpha ( $\alpha$ ) = 0.05. Calculate one sample statistics for the given observations.
- 8. Write a detailed note on significance of report writing.
- 9. Define mean, mode, median, and standard deviation with suitable example.

#### **SECTION-C**

10. Define students T test. Write the significance and assumptions of both tests with example.

#### OR

What do you mean by chi-square test. Explain with example.

11. a. To carry out one factor analysis of variance of the given observations of three different groups of student performance in grades. Find out the mean difference between the groups and state the hypothesis, [alpha level: 0.05 = F = 5.41]

Group A	Group B	Group C
5	4	4
4	3	5
5	3	6

#### OR

b. Define regression analysis. Write its significance in research.

# NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.