FIRST SEMESTER B.A./B.Sc. DEGREE EXAMINATION, NOVEMBER 2019

(CUCBCSS—UG)

Microbiology

MBG 1C 02—BIOSTATISTICS-I

(2018 Admissions)

Time : Three Hours   Maximum : 80 Marks

Use of Calculator is permitted.

Section A

Answer all questions in one word.
Each question carries ½ mark.

1. When the population under investigation is infinite the method used to collect the data is —————.

2. Temperature in 4 consecutive days is a ————— scale of measurement.

3. The most appropriate Measure of central tendency for interval scaled data is —————.

4. Ogives for more than type and less than type intersect at —————.

5. The probability of intersection of two mutually exclusive event is always —————.

6. Median = ————— Quartile.

7. If X is a Poisson random variable with mean λ, then the variance of X is —————.

Write True *or* False :

8. Nationality of a student is an attribute.

9. Histogram is used to represent qualitative data.

10. Standard deviation is the most stable measure of dispersion.

11. If A and B are independent events then $P(A \cap B) = P(A)P(B)$.

12. If X is a Bernoulli random variable with probability of success p then $P(X = n) = p^n$.

(12 × ½ = 6 marks)

Section B

Answer all *questions in* one *sentence each.*
Each question carries 2 *marks.*

13. Distinguish between Primary Data and Secondary Data.

14. Define an Ogive.

15. Define Tabulation.

16. Give the empirical relationship between mean, mode and median.

17. Find the median for the values 11, 5, 7, 6, 9, 13, 10, 15.

18. Define coefficient of Quartile Deviation.

19. Define a random variable.

20. Define addition theorem for two events.

21. Define binomial distribution.

22. Define parameter and statistics.

(10 × 2 = 20 marks)

Section C

Answer any **six** *questions.*
Each question carries 5 *marks.*

23. Define a Pie diagram. Briefly explain the steps involved in constructing the Pie diagram.

24. What are the advantages of sampling over census ?

25. For the following data calculate mode and median :

X	:	10	20	30	40	50	60
f	:	8	14	18	23	28	9

26. Find the coefficient of quartile deviation for the following data :

Class	:	0-10	10-20	20-30	30-40
f	:	1	3	4	2

27. What is meant by measure of dispersion ? What are the desirable properties of a good measure of dispersion ?

28. Explain briefly the procedure of fitting of Poisson distribution.

29. Define a Normal distribution. Give its important properties.

30. Write a short note on t distribution ?

(6 × 5 = 30 marks)

Section D

Answer any two questions.
Each question carries 12 marks.

31. (a) Distinguish between Classification and Tabulation.

    (b) Calculate the mode for the following data :

Class	:	0-10	10-20	20-30	30-40	40-50	50-60
f	:	7	15	25	24	20	9

    (3 + 9 = 12 marks)

32. (a) Define probability density function of a discrete random variable, give its properties.

    (b) A certain player say X, is known to with probability 0.3 if the track is fast and 0.4 if the track is slow. For Monday there is a 0.7 probability of a fast track and 0.3 probability of slow track. What is the probability that player X will win on Monday.

    (4 + 8 = 12 marks)

33. (a) Give the uses of F distribution.

    (b) Find the standard deviation of the following distribution :

Class	:	20-30	30-40	40-50	50-60	60-70	70-80	80-90
f	:	3	6	12	15	14	7	3

    (3 + 9 = 12 marks)

    [2 × 12 = 24 marks]