

MAHARASHTRA ANIMAL AND FISHERY SCIENCES UNIVERSITY, NAGPUR
SEMESTER END THEORY EXAMINATION, B.Tech. (DT)

Semester	: VIII (V Dean)	Academic Year	: 2023-2024
Course No.	: DBM-811	Course Title	: Industrial Statistics
Credits	: 1+1=2	Total Marks	: 50
Day & Date	: Monday; 22/07/2024	Time	: 02 hrs.

- Note :**
- 1) All questions from **Section 'A'** are compulsory.
 - 2) Solve **Any Three** questions from **Section 'B'**.
 - 3) Draw neat and well labeled diagram wherever necessary.

SECTION –‘A’

- Q. 1 A) Define the following. (05)
- i) Level of significance
 - ii) Probability
 - iii) Regression
 - iv) Cluster Sampling
 - v) Statistical Quality Control
- B) Answer the following. (05)
- i) What is the use of charts and graphs?
 - ii) How we calculate mode?
 - iii) Enlist sampling methods.
 - iv) What is acceptance sampling?
 - v) When we use one way ANOVA?
- Q. 2 A) State Whether True or False. If false, rewrite the statement after making necessary corrections in underlined word(s). (05)
- i) The skewness of variable is based on measure of central tendency.
 - ii) Quartile Deviation = $2/3$ (Standard Deviation).
 - iii) A statement whose validity is tested on the basis of a sample is called as statistical hypothesis.
 - iv) We calculate the skewness of variables based on mean and median.
 - v) Probability is quantified as a positive number between 0 and 1.
- B) Choose the most appropriate answer from the options given below. (05)
- i) Construction of a cumulative frequency table is useful in determining the
 - a) Mean
 - b) Median
 - c) Mode
 - d) None of these
 - ii) In the systematic sampling, the value of k is classified as
 - a) Sampling Interval
 - b) Sub Stage Interval
 - c) Secondary Stage Interval
 - d) Multistage Interval
 - iii) A hypothesis that specifies all the values of parameter is called
 - a) Simple hypothesis
 - b) Composite hypothesis
 - c) Statistical Hypothesis
 - d) None of these

(P.T.O.)

- iv) A numerical value used as a summary measure for a sample, such as a sample mean, is known as a
- | | |
|-------------------------|---------------------|
| a) Population Parameter | b) Sample Parameter |
| c) Sample Statistic | d) Population Mean |
- v) The sum of square of deviation from their arithmetic mean is
- | | |
|------------|------------------|
| a) Maximum | b) Minimum |
| c) Zero | d) None of these |

SECTION – 'B'

- Q. 3 A) Explain the concept of measure of dispersion. What are the characteristics of good measure of dispersion. (05)
B) Difference between Correlation and regression. (05)
- Q. 4 A) Define and explain paired t-test and its significance. (05)
B) Explain the law of addition and multiplication of probability with example. (05)
- Q. 5 A) Describe and explain the idea of skewness and kurtosis. (03)
B) What are control charts for variables and attributes? (03)
C) Define and explain paired t-test. (04)
- Q. 6 A) Define and Explain the idea of systematic sampling. (03)
B) Difference between one-way and two-way classification. (03)
C) Describe the probability model from which the binomial distribution can be generated. (04)
- Q. 7 Enlist the main characteristics of the normal distribution. (10)
