

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

Semester	: VIII (V Dean)	Academic Year	: 2021-2022
Course No.	: DBM-811	Course Title	: Industrial Statistics
Credits	: 1+1=2	Total Marks	: 50
Day & Date	: Friday, 03/06/2022	Time	: 02.30 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) Choose the most appropriate answer from the options given below. (05)

- i) Individual respondents, focus group, and panel of responds are categorized as
 - a) Primary data source.
 - b) Secondary data source.
 - c) Itemized data source.
 - d) Pointed data source.
- ii) When we throw a coin then what is the probability of getting head?
 - a) $\frac{1}{2}$
 - b) 3
 - c) 4
 - d) 1
- iii) Test to be applied when number of observations are less than 30 and variance is not known, is said to be
 - a) Z-test
 - b) T-test
 - c) F-test
 - d) Chi-square test
- iv) If the null hypothesis is false then which of the following is accepted?
 - a) Null Hypothesis
 - b) Positive Hypothesis
 - c) Negative Hypothesis
 - d) Alternative Hypothesis
- v) In regression analysis, if the independent variable is measured in kilograms, the dependent variable
 - a) Must also be in kilograms
 - b) Must be in some unit of weight
 - c) Cannot be in kilograms
 - d) Can be any units

B) Define the following. (05)

- i) Normal distribution
- ii) Correlation
- iii) Hypotheses.
- iv) Statistical quality control
- v) Mesokurtic

Q. 2 A) 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?

(P.T.O.)

B) State whether True or False. If false, rewrite the statement after making necessary corrections. (05)

- i) The skewness of variable is based on measure of central tendency.
- ii) Quartile Deviation = $\frac{2}{3}$ (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.

SECTION - 'B'

Q. 3 A) If the mean deviation (M.D.) of a moderately skewed distribution is 7.2 units, find the standard deviation (S.D.) and quartile deviation (Q.D.). (05)

B) Difference between one-way and two-way classification. (05)

Q. 4 A) Define and explain t-test, and its significance. (05)

B) Explain clearly the concept of correlation. What are the types of correlation? How it is useful in dairy industry? (05)

Q. 5 A) What are the characteristics of good measures of central tendency? (03)

B) Define normal distribution and its applications with example. (03)

C) Explain the hypothesis testing. (04)

Q. 6 A) What is control charts for variables and attributes? (03)

B) Explain the concept of partial and multiple regressions. (03)

C) Explain with example laws of addition and multiplication of probability. (04)

Q. 7 Obtain the rank correlation coefficient for the following data (10)

X	68	64	65	50	64	80	75	40	55	64
Y	62	58	68	45	81	60	68	48	50	70
