BACHELOR OF SCIENCE (BIOTECHNOLOGY) (CBCS - 2015 COURSE)
T.Y.B.Sc. (Biotech) Sem-V : WINTER :- 2021
SUBJECT: BIOSTATISTICS

Day : Tuesday
Date 1/2/2022

W-13254-2021

Time : 10:00 AM-01:00 PM
Max. Marks: 60

N.B.:

1) Question No. 1 and 5 are **COMPULSORY**.
2) Solve any **TWO** from Q. No. 2 to 4 and any **TWO** from Q. No. 6 to 8.
3) Figures to the right indicate **FULL** marks.
4) Both sections should be written in the **SAME** answer book.
5) Nonprogrammable calculator is **ALLOWED**.

SECTION-I

Q.1 Choose appropriate words/values to fill in the blanks. **(10)**

a) Give values of combinations C_8^8 = _____ and C_1^8 = _____.

b) If N=36, Variance = 16, then value of Standard Error is_____.

c) If A = {a, b, d, e, x} and B = {a, c, d, f, u} then A ∩ B = _____.

d) *Std Dev* is a Measure of _____ *Median* is a Measure of _____.

e) If observations are {1.2, 3.1, 3.1, 5.2, 5.2, 7.1, 8.5} then frequency of 3.1 is _____ and its relative frequency is _____.

Q.2 Three seeds were subjected to a germination trial. It is known that germination % of the lot is 80%. Find the probabilities of events {No seed germinates}, {Only one germinates}, {Two seeds germinate} and {All three germinate}. **(10)**

Q.3 **A)** Explain how to use Spread Sheet's statistical functions for data analysis. **(05)**

B) How to install Analysis Tool Pack. Explain. **(05)**

Q.4 A designed experiment was conducted to compare vitamin C contents of six products. Complete the ANOVA table using the information given. Perform the F-test and draw inference. **(10)**

Source of variation	df	SS	MSS	F-Values
Products			2.05	
Error				
Total		48.76		

Given: Variate: Vitamin C, Product Tested (6), Replications (4) FINV function gave the table value of F as 2.772853

SECTION-II

Q.5 Answer the following : **(10)**

a) Draw a typical scatter diagram to indicate positive, negative and no-correlations.

b) Name the variable types used in biostatistics. Give one example each.

c) What are quartiles? Explain how they are computed.

d) Draw a typical BAR chart. Use own data to illustrate.

e) Can ADDTRENDLINE tool on spread sheet be used for curve fitting? If yes explain.

P.T.O.

Q.6 Diameters (variable x) of four fruits were {2, 3, 3, 4} cms. Their weights (variable y) were {12, 15, 15, 20} gms respectively. Find values of X, X^2, Y, Y^2, and XY. Compute mean(x), mean(y), var(x), var(y) and covariance(x, y). **(10)**

Q.7 Discuss the provisions in the Analysis Took Pack provided on the Spread Sheet. Discuss at least three provisions. **(10)**

Q.8 **A)** Write a short note on Gaussian distribution. **(05)**

B) Give Axiomatic definition of probability. What are sure events and impossible events? **(05)**

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