

T. Y. B. SC. (BIOTECHNOLOGY) SEM – V (2010 COURSE) :

WINTER - 2017

SUBJECT: BIOMETRICS, BIOSTATISTICS & QUALITY CONTROL

Day : Friday
Date : 10/11/2017

Time: 2.00 PM TO 05.00 PM
Max Marks:80

W-2017-0961

N.B

- 1) All questions are **COMPULSORY**.
- 2) Both the sections to be written in **SEPARATE** answer book.
- 3) Figure to right indicate **Full** marks.

SECTION - I

Q.1 A) Answer any **ONE** of the following. (06)

- a) What are phenotypic, genotypic and environmental correlations?
- b) Find the correlation coeff, regression coeff (slope) and intercept

X = age (day)	6	7	8	9	10	11	12
Y = height(cm)	10.0	11.1	12.0	13.5	15.0	16.0	17.0

Q.1 B) Answer **ANY TWO** of following (10)

- a) Draw typical diagrams using the given data
Match the following

1. Histogram

Obs	2.5	3.5	4.5	5.5
Frequency	4	11	15	3

2. Scatter-diagram

Yield (Y)	12	13.5	14.7	15.3	17	18
Fertilizer (X)	10	15	20	25	30	35

- b) Pie-Chart

Colour	Blue	Green	Red
No. of items	30	50	20

- c) Give an brief account on methods of dispersion and sampling methods

Q.2 Write a short notes **ANY FOUR** (16)

- a) Randomization
- b) Hypothesis
- c) Heterosis
- d) Type of polygenic variations
- e) Quantitative genetics

SECTION - II

Q.3 Answer the following Any three (12)

- a) What is diallele cross? Discuss types of diallele cross and give its significance in plant breeding
- b) Explain various types of biometrical techniques used in crop improvement
- c) Discuss simple correlation, partial and multiple correlation in brief

Q4. Answer the following. **(12)**

a) STATE TRUE OR FALSE

- i)** Correlation between two variables can Never be negative
 - ii)** Range is computed as the difference between Max and Min values in the data set.
 - iii)** If value of variance is 5 the values of std deviation is 25
 - iv)** Z- test is used for comparison of a observed mean with a standard mean when sample size is large
 - v)** If increase in value of X results in increasing the value of Y then Y is negatively correlated to X
 - vi)** Variance is measure of dispersion and it can never have negative value
- b)** What is line X tester cross analysis? Give its significance in plant breeding.

Q5. Answer the following **ANY TWO** **(12)**

- a)** What is shelf life and how it is determined?
- b)** How a vendor/supplier is validated?
- c)** Explain the requirements of receipt and storage?

Q.6 Write short notes (**ANY THREE**) **(12)**

- a)** Good Documentation practices
- b)** Types of inputs in manufacturing process of biopharmaceuticals.
- c)** Authorized person
- d)** Evolution of quality concept

* * *