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

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