

10.12.18 (M)



[This question paper contains 7 printed pages]

Your Roll No. :

Sl. No. of Q. Paper : **684** **I**

Unique Paper Code : 32167502

Name of the Course : **B.Sc.(Hons.) Botany :**
DSE - II

Name of the Paper : Biostatistics

Semester : V

Time : 3 Hours **Maximum Marks : 75**

Instructions for Candidates :

- (a) Write your Roll No. on the top immediately on receipt of this question paper.
- (b) Attempt any **five** questions in all.
- (c) Question **NO.1** is compulsory.
- (d) Nonscientific calculator allowed.
- (e) Statistical table provided by the college may be use if required.

P.T.O.

1. (a) Define any **five** :

1×5=5

(i) Ogive curve

(ii) Null hypothesis

(iii) Quartile deviation

(iv) Degree of freedom

(v) Relative frequency

(vi) Independent variables

(b) Fill in the blanks :

1×5=5

(i) For 28, 23, 32, 24, 29, 25, 27, 29, 30
median value will be

(ii) The average of the upper and lower limit
of a class is known as

(iii) The process of placing classified data into
row and column is known as

(iv) Number of observations falling within a
particular class interval is called
.....

(v) In a symmetric distribution the relation
between mean, median and mode is as
follows, Mode = 3 Median -

(c) Match the following :

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A	B
(I) Mode	(i) Q2
(II) Mean Deviation	(ii) σ^2
(III) Median	(iii) p
(IV) Variance	(iv) δ
(V) Spearman Correlation coefficient	(v) Mo

2. Discuss any **three** of the following :

5×3=15

(a) Explain the necessity of classification of data.
Describe various criteria used in the
classification of collected data.

(b) What do you mean by sampling ? Discuss

the different sampling methods used in biostatistics.

(c) What is geometric mean ? How to calculate it ? Discuss its merits and demerits.

(d) What is Spearman's correlation coefficient ? How to calculate it ? Explain its merits and demerits over Karl Pearson's correlation coefficient.

3. Differentiate between any **five** of the following :

3×5=15

(a) Grouped and Ungrouped data

(b) Frequency polygon and Histogram

(c) Positive and Negative correlation

(d) Quantitative and Qualitative variables

(e) Biological experiment and Survey

(f) Mean Deviation and Standard Deviation

4. (a) Make a bar diagram for following data of a town representing the population in different year. 3

Year	1940	1950	1960	1970	1980	1990	2000	2010
Population in thousands	43	55	65	79	90	102	132	154

(b) In a city total numbers of migratory birds during the month of February 2017 were recorded day wise. With the help of χ^2 test explain if there is any significant difference. 5

Day	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Sun.
No. of birds	64	80	73	88	62	92	66

- (c) Calculate the student *t*-test of the following data of plant height of two species and check the significance.

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Species A (in cm)	22	20	26	25	30	21	25	29	28	24
Species B (in cm)	22	27	25	30	32	26	27	23	24	29

5. (a) Explain role of biostatistics in biological research.

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- (b) What do you mean by measures of dispersions ? Discuss significance of coefficient of variance over standard deviation.

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- (c) Carbohydrate content (g/100g) in seeds of three different varieties of "Wheat" was recorded. Calculate the coefficient of variance for carbohydrate content (g/100g) in all three different varieties.

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Variety A	55	62	54	57	56	62	54	56	58	59	55	56
Variety B	58	54	21	51	59	46	65	31	68	41	70	36
Variety C	65	55	26	40	30	74	45	29	85	32	80	39

6. (a) What is regression coefficient. Explain the significance of two regression lines ? Discuss its similarities and dissimilarities with correlation coefficient.

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- (b) Calculate the regression coefficient for the following data. Calculate the expected protein content if carbohydrate content is 60.

5+3=8

Carbohydrate content (% dw)	53	56	52	54	55	51	57	57	59	56
Protein Content (% dw)	13	10	13	12	11	13	10	9	8	11

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