

(i) Printed Pages: 4

Roll No.

(ii) Questions : 9 Sub. Code :

1	0	5	5	5
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Exam. Code :

5	0	0	2
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Bachelor of Arts (FYUP) 2nd Semester

(2055)

BIOTECHNOLOGY

Paper : Biostatistics

Time Allowed : Three Hours]

[Maximum Marks : 45

Note :— Attempt **FIVE** questions in all, including Q. No. 1 which is compulsory and selecting **TWO** questions from each unit. Use of electronic calculator with four basic mathematical operations and upto one memory is allowed.

(Compulsory Question)

1. (a) Differentiate between Variable and Attribute.
- (b) What do you mean by classification of the data ?
- (c) What do you mean by Kurtosis ?
- (d) Mention the properties of correlation coefficient.
- (e) Define deciles and percentiles with formulas.

- (f) Write the formulas of harmonic and geometric mean in case of frequency data.
- (g) Define mutually exclusive events with example.
- (h) Define simple linear regression. $8 \times 1\frac{1}{2}$
- (i) How can we construct a pie chart of the numerical data ?

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UNIT-I

2. (a) Draw histogram of the following data :

Class	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60
Frequency	12	16	19	17	14	12

- (b) Explain the different methods of collecting primary data.

4,4

3. (a) Draw pie diagram to represent the data :

Item	Expenditure
Food	240
Clothing	66
Rent	125
Fuel and Lighting	57
Education	42
Miscellaneous	190

- (b) Discuss various types of bar diagrams with examples.

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4. (a) Represent the following data of the development expenditure of Central Government in India during 1997-98, 1998-99, 1999-2000 by bar diagram.

Year	1997-98	1998-99	1999-2000
Loans and Advances	8601	10335	11549
Capital	3787	4456	4803
Revenue	3477	4036	3709
Total	15865	18827	20061

- (b) Briefly discuss the essential parts of a statistical table.
4,4

5. (a) Discuss different types of classifications with suitable examples.
- (b) Define the following :
- (i) Discrete and continuous data
- (ii) Stacked bars and line diagram. 4,4

UNIT-II

6. (a) What do you mean by dispersion and discuss its various measures.
- (b) Find the arithmetic Mean, Median, Mode and Standard Deviation of the following data :

Class	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60
Frequency	2	6	9	7	4	2

4,4

7. (a) What do you understand by Kurtosis ? How is it measured ? Distinguish clearly, by giving figures, between different types of Kurtosis.
- (b) Calculate Karl Pearson's Coefficient of skewness from the following data :

Size	1	2	3	4	5	6	7
Frequency	12	20	32	27	14	5	4

4,4

8. (a) Obtain the line of regression of Y on X for the following data. Also obtain the estimate of Y when $X = 70$.

X	64	65	66	66	67	68	69	71
Y	68	69	66	69	73	72	70	72

- (b) Write the merits and demerits of Median. 5,3

9. (a) Suppose 70 per cent of all tourists who come to India will visit Agra while 60 per cent will visit Goa and 50 per cent of them will visit both Agra and Goa. What is the probability that a tourist will visit either Goa or Agra or both ?

- (b) Find the Karl Pearson's coefficient of correlation of the following data :

X	50	52	56	55	58	51	54
Y	52	49	58	53	56	57	51

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