Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (NEW) EXAMINATION – WINTER 2022

Subject Code:3150409 Date:04-01-2023

Subject Name:Biostatistics

Time:10:30 AM TO 01:00 PM Total Marks:70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

MARKS

Q.1 **(a)** What is inferential biostatistics? **03**

(b) Explain the terms: Parameteric test and Non-parametric test. **04**

(c) Find the mean from the following data: **07**

Marks(X) :	5	10	15	20	25	30	35	40
No. Of Students (f) :	5	7	9	10	8	6	3	2

Q.2 **(a)** Calculate the mode for the following data: 32,22,29,25,17,25,40. **03**

(b) The mean age of 40 students is 16 years and the mean age of another group of 60 students is 20 years. Find out the mean age of all of the 100 students combined together. **04**

(c) In a class following is the distribution of marks of 85 students.Calculate the modal class and mode of the following data: **07**

Marks (Grouped data) :	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60
No. Of Students (f)	5	7	8	18	25	12	7	5

OR

(c) Discuss computation of Poisson distribution. **07**

Q.3 **(a)** Write down the importance of Dispersion. **03**

(b) Explain the terms: Standard deviation and mean deviation and when to use it? **04**

(c) Calculate mean deviation from the median for the following data: **07**

Flowers less than :	80	70	60	50	40	30	20	10
No. Of plants :	100	90	80	60	32	20	13	5

OR

Q.3 **(a)** What is correlation? How you will show the bivariate distribution? Describe different types of correlation? **03**

(b) How will you compare the mean of more than two samples? What is the name of the test and how it is peformed? **04**

(c) Write a note on the advantages and disadvantages of nonparametric methods. **07**

Q.4 **(a)** Write down the F-test and its assumptions. **03**

(b) How will you compare the mean of more than two samples? What is the name of this test and how it is performed? **04**

(c) Calculate mean deviation from mean values of the following data: **07**

Class interval :	0-4	4-8	8-12	12-16	16-20
Frequency :	4	6	8	5	2

OR

Q.4 **(a)** Differentiate between correlation and regression. **03**

(b) By applying binomial theorem, the probability of having two males and two female children in a family of four children can be calculated as follows: **04**

(c) The study of effect of a pesticide in realtion to fish mortality on fish, *Tilapia* showed that the probability of their survival was 15%. If 25 batches of 5 fishes each were subjected to this experiment in how many batche 5 or less than 5 fishes would die? **07**

Q.5 **(a)** Write down the assumption of ANOVA. **03**

(b) What is correlation? How you will show the bivariate distribution? Describe different types of correlation. **04**

(c) To calculate the Z-score for the value of 14 in the following data set: **07**

3	8	6	14	4	12	7	10

OR

Q.5 **(a)** Describe significance of chi-square distribution. **03**

(b) A man and his wife appear for an interview for two vacancies. The probability of wife's selection is 1/7 and that of husband's selection is 1/5. What will be the probability that either one of them is selected? **04**

(c) Find the coefficient of correlation between the height of fathers and sons from the following data: **07**

Height of fathers (X) :	65	66	67	68	69	70	71
Height of sons (Y) :	67	68	66	69	72	72	69

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