

B.Tech Food Technology
Semester VII – Examination, 2022
Paper Title: Research Methodology
Paper Code: BFTC-702

Roll No:

B.Tech
2022
7th Sem

Time: 3 hours

Maximum Marks: 75

Attempt all questions. Marks are mentioned against each question.

Section A (7x5=35)

(7x5=35)

Q1. Answer the following questions.

- What do you mean by sampling error? Mention the various non sampling errors.
- Calculate the coefficient of variation for the following data set. The price, in rupees, of a stock over five trading days was:

62, 68, 65, 67, 69
- Briefly describe the classification of sampling methods in statistics, citing suitable examples
- What is research ethics? What do you mean by good ethical practices?
- "Impact factor, an appropriate metrics of selecting journals for publication". Discuss the statement.
- Describe the meaning and significance of a research design. Discuss important concepts related to research design.
- Write a short note on the role of funding agencies in research.

Section B (4x10=40)

(4x10=40)

Q2. Attempt any four of the following

- Set up an analysis of variance table for the following per acre production data for three varieties of wheat, each grown on 4 plots and state if the variety differences are significant.

Plot of land	Per acre production data		
	Variety of wheat		
	A	B	C
1	6	5	5
2	7	5	4
3	3	3	3
4	8	7	4

F (Tabulated) at 5% level is 4.26.

- The ages of the signers of the Declaration of Independence of the US are shown below.

41	54	47	40	39	35	50	37	49	42	70	32
44	52	39	50	40	30	34	69	39	45	33	42
44	63	60	27	42	34	50	42	52	38	36	45
35	43	48	46	31	27	55	63	46	33	60	62
35	46	45	34	53	50	50					

Construct a frequency distribution using seven classes. Include relative frequency, percentage and cumulative frequency. Construct a histogram, frequency poly-gone, and Ogive.

- A salesman keeps a record of the number of shops he visits each day.

Shops visited	0 - 9	10 - 19	20 - 29	30 - 39	40 - 49
Frequency	7	63	21	60	15

Estimate the mean number of shops visited. Estimate the median. What is the modal class?

- The sales of a company (in million dollars) for each year are shown in the table below.

x (years)	2005	2006	2007	2008	2009
y (sales)	12	19	29	37	45

Find the regression line equation. Use the regression line equation as model to estimate the sales of company in 2012.

- A random sample of 395 people was surveyed and each person was asked to report the highest education level they obtained. The data that resulted from the survey is summarized in the following table: (Tabulated value required is 7.815)

	High School	Bachelors	Masters	PhDs
Female	60	54	46	41
Male	40	44	53	57

Are gender and education level dependent at 5% level of significance? In other words, given the data collected above, is there a relationship between the gender of an individual and the level of education that they have obtained?