# Tribhuvan University
## Faculty of Humanities & Social Sciences
## OFFICE OF THE DEAN
## 2023

Bachelor in Computer Applications

Course Title: Probability and Statistics

Code No: CAST202

Semester: III

Full Marks: 60

Pass Marks: 24

Time: 3 hours

Batch: 2021

Candidates are required to answer the questions in their own words as far as possible.

### Group B

Attempt any SIX questions.

[6×5=30]

2. Discus the role of statistics in computer application.

3. Define Statistics? The following of telephone calls received at an exchange for 200 successive one-minute intervals are given below.

| No. of calls | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| Frequency | 15 | 22 | 28 | 35 | 42 | 34 | 24 |

Compute the mean, median and mode..

4. Define correlation. Calculate and analyze the correlation coefficient between the number of study hours and the number of sleeping hours of different students.

| Number of Study Hours | 2 | 4 | 6 | 8 | 10 |
|---|---|---|---|---|---|
| Number of Sleeping Hours | 10 | 9 | 8 | 7 | 6 |

Also find coefficient of determination and interpret it.

5. Define regression. The following table gives information on ages and cholesterol levels for a random sample of 10 men.

| Age | 58 | 69 | 43 | 39 | 63 | 52 | 47 | 31 | 74 | 36 |
|---|---|---|---|---|---|---|---|---|---|---|
| Cholesterol level | 189 | 235 | 193 | 177 | 154 | 191 | 213 | 165 | 198 | 181 |

a) Construct regression equation of cholesterol level on age.

b) Estimate the value of cholesterol level when age is 60 years.

c) Interpret the regression coefficient.

6. Define binomial distribution. During one stage in the manufacture of integrated circuit chips, a coating must be applied. If 70% of chips received a thick enough coating, find the probability that among 15 chips
   (i) at least 12 will have thick enough coatings,
   (ii) exactly 10 will have thick enough coatings.

7. In measuring reaction time, a psychologist estimates that the standard deviation is 0.95 sec, how large a sample of measurements must be taken in order to be 95% confident that the error his estimate of mean will not exceed 0.01 second?

8. Define sampling. A population consists of the four numbers 1, 3, 4, 8. (i) Write down all possible sample size of two without replacement. (ii) Show that sample mean is an unbiased estimate of population mean.