



**Tribhuvan University**  
**Faculty of Humanities & Social Sciences**  
**OFFICE OF THE DEAN**  
**2020**

Bachelor in Computer Applications  
Course Title: Probability and Statistics  
Code No: CAST 202  
Semester: III

Full Marks: 60  
Pass Marks: 24  
Time: 3 hours

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. Write down the process of collecting primary data.

3. Determine First Quartile ( $Q_1$ ) 7<sup>th</sup> Decile ( $D_7$ ) and 80<sup>th</sup> Percentile ( $P_{80}$ ) from the following data:

Age in year	10	12	14	16	18	20	22	24	26
No. of people	7	11	24	35	27	17	11	8	5

4. Calculate correlation coefficient between income and expenditure in foods of certain families of Kathmandu Metropolitan from the following information:

Income (000Rs)	10	11	12	13	14
Expenditure in foods (000Rs)	9	8	9	12	11

5. A box contains 50 items of which 20 are defectives. If one item is selected randomly from the box, what is the probability that it is a non-defective item?

6. What is sampling? The standard deviation of marks in an entrance exam of BCA students is 0.5. How large a sample must be taken in order to be 95% confidence that the error of his/her estimate will not exceed 0.01.

7. Calculate the median and mode from following distribution:

Expenditure(000Rs)	10-20	20-30	30-40	40-50	50-60	60-70
Number of families	7	12	15	13	8	5

8. A test was given to three candidates taken at random from three provinces of Nepal. The scores of candidates are given below:

Gandaki	9	7	6
Lumbini	7	4	5
Bagmati	6	5	6

Carry out one-way ANOVA.

**Group C**

Attempt any TWO questions.

[2×10 = 20]

9. From the following data, determine average marks of student, standard deviation and coefficient variation.

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90
No. of people	54	90	86	58	62	82	78	66	70

10. In a normal distribution with mean =200 and standard deviation= 20, find the probability that

a)  $P(X > 180)$                       b)  $P(X < 220)$                       c)  $P(160 < X < 240)$                       d)  $P(X > 220)$

e) 10% values are less than what values of X?

11. Describe simple random sampling with a suitable example.