

PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
M.Sc., Winter 2018-19 Examination

Semester: 1**Subject Code: 11209105****Subject Name: Research Methods and Statistics - 1****Date: 10/12/2018****Time: 10:30 A.M. to 1:00 P.M.****Total Marks: 60****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1. A) Essay type/ Brief note (8X1) (Each of 08 marks) (08)

- (a) The frequency distribution of weight in grams of mangoes of a given variety is given below calculate the arithmetic mean and the median:

Weight in gms:	410-419	420-429	430-439	440-449	450-459	460-469	470-479
No. of mangoes	14	20	42	54	45	18	7

Q.1. B) Answer the following questions (Any two)

- (a) Short note/ Brief note (2x2) (Each of 02 marks) (04)
1. What is random experiment?
 2. Definition of statistics and their types?
- (b) Write a Short note on trial and event. (04)
- (c) Write a Short note on Karl-pearson's correlation coefficient formula. (04)

Q.2. A) Answer the following questions.

- (a) Short note/ Brief note (2x2) (Each of 02 marks) (04)
1. Define variable.
 2. Define Independent event.
- (b) Discuss an importance and limitations of statistics in research. (04)

Q.2. B) Answer the following questions (Any two)

- (a) Short note (Each of 01 marks) (03)
1. Define mean
 2. Define probability
 3. Define median
- (b) Write a Short note on scatter diagram. (03)
- (c) Write a Short note on demerits of mode. (03)

Q.3. A) Essay type/ Brief note (4x2) (Each of 04 marks) (08)

- (a) Explain Poisson distribution.
- (b) Explain Binomial distribution.

Q.3. B) Answer the following questions (Any two)

- (a) Short note/ Brief note (2x2)/ (Each of 02 marks) (04)
1. Write a Short note on population
 2. Write a Short note on sample
- (b) Write a Short note on merits of median and mean. (04)
- (c) Write a Short note on correlation coefficient. (04)

Q.4. A) Answer the following questions.

- (a) Short note/ Brief note (2x2) (Each of 02 marks) (04)
- Find the correlation coefficient by Karl- Pearson's correlation coefficient method.

X	21	22	23	24	25	26	27
Y	16	15	17	18	19	20	21

- (b) Write a Short note on Central Tendency (Mean, Median and Mode). (04)

Q.4. B) Answer the following questions (Any two)

- (a) Short note/ Multiple choice questions. (Each of 01 marks) (03)
1. What is qualitative data?
 2. What is bivariate data?
 3. What is quantitative data?
- (b) Application of probability in various fields. (03)
- (c) Write a Short note on Type – I error and Type – II error. (03)