



ST. LAWRENCE HIGH SCHOOL
A JESUIT CHRISTIAN MINORITY INSTITUTION



SOLUTION OF WORKSHEET-1

SUBJECT - STATISTICS

Term : 1st

Topic - CORRELATION

Class: XII

Full Marks: 15

Date:02.05.2020

Q1. Write down the nature of correlation (positive or negative or zero) for the following variables :

(i) Ages of husbands and wives

Ans: Positive correlation

(ii) Age and income

Ans: Positive correlation

(iii) Income and expenditure

Ans: Positive correlation

(iv) Sell of woolen garments and daily minimum temperature

Ans: Negative correlation

(v) Sell of cold drinks and maximum daily temperature

Ans: Negative correlation

(vi) Production and per unit price of an item

Ans: Negative correlation

(vii) Speed of an automobile and the distance required to stop the car after applying brakes

Ans: Positive correlation

(ix) Match score and shoe size

Ans: Uncorrelated

(x) Income and religion

Ans: Correlation can not be measured since religion is an attribute.

Q2 Write down the correct answer :

- (i) If $u + 3x = 5$, $2y - v = 7$ and correlation coefficient of x and y is 0.12, then correlation coefficient of u and v will be :

(a) 0.6 (b) 0.12 (c) -0.12 (d) none of these

Ans: (c) -0.12

- (ii) If $2u + 5x = 17$ and $5v = 11 + 2y$ are the relations between variables x, y, u and v , and the covariance between x and y is 3, then the covariance between u and v is

(a) 3 (b) -3 (c) 30 (d) none of these

Ans: (b) -3

- (iii) If $2x + 3y = 7$ is the relation between x and y , then the correlation coefficient between x and y is

(a) +1 (b) -1 (c) any positive fraction (d) impossible to be determined from the information given.

Ans: (b) -1

Q3. Explain what is wrong in the following statements :

- (i) There is a high correlation between the gender of workers and their weekly income

Ans: Correlation can only be measured of two variables. Here gender of workers is an attribute.

- (ii) The correlation between planting rate and the yield of corn is found to be $r=0.21$ units.

Ans. correlation coefficient is an unit free measure.

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