PATAN MULTIPLE CAMPUS

Practical – 7 Correlation and Regression

Roll No.: 23
Program: BIT
Subject: Basic Statistics

Date: 2081-05-30
Semester: 2nd
Section: A

Question: Find correlation and regression of the following data and also find coefficient of determination.

Marks of Mathematics	14	20	15	13	15	20	25
Marks of Statistics	55	50	45	60	55	58	62

Also find the regression equation of marks of statistics on marks of mathematics. Estimate the marks of Statistics when mark of Mathematics is 50.

Working Expressions:

Calculation:

i. Data

Marks of Mathematics	14	20	15	13	15	20	25
Marks of Statistics	55	50	45	60	55	58	62

ii. Syntax

```
DATASET ACTIVATE DataSet0.
CORRELATIONS
  /VARIABLES=math stat
  /PRINT=TWOTAIL NOSIG FULL
  /MISSING=PAIRWISE.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA CHANGE
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT stats
  /METHOD=ENTER math.
```

iii. Output

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.660[a]	.436	.323	7.946	.436	3.861	1	5	.107

a. Predictors: (Constant), math

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	71.863	11.175		6.431	.001
	math	-1.255	.639	-.660	-1.965	.107

a. Dependent Variable: stats

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	243.753	1	243.753	3.861	.107[b]
	Residual	315.675	5	63.135		
	Total	559.429	6			

a. Dependent Variable: stats

b. Predictors: (Constant), math

Correlations

		math	stat
math	Pearson Correlation	1	.325
	Sig. (2-tailed)		.477
	N	7	7
stat	Pearson Correlation	.325	1
	Sig. (2-tailed)	.477	
	N	7	7