

- c) Explain the relationship between Alpha/and Beta β . (4 marks)
- d) Explain the basis of deciding between directional and non-directional alternatives (4 marks)
- e) Describe the conditions that determine the power of the statistical test. (4 marks)

Q.4 Assuming that the correlation of IQ's of 38 set of identical twins is .87 and the correlation between 27 sets of fraternal twins is .53, test a theoretical prediction that the correlation is higher for identical than fraternal twins.

Using correct formula,

Show your hypothesis

Carry out computation.

State your conclusion.

Total: (20 marks)

Q.5 A KU fitness instructor wanted to find out the effect of training-time on strength development based on number of push-ups. Four subjects were randomly assigned to each of the four training categories of 10 min., 20 min., 30 min and 40 min. training sessions per day, five days a week for a period of 8 weeks. Data was collected as follows:-

10 min.	20 min.	30 min.	40 min.
A_1	a_2	a_3	a_4
37	36	43	76
22	45	75	66
22	47	66	43
25	23	46	62

Given the level of confidence at 0.05, conduct a One Way Analysis of Variance (ANOVA) as follows:-

- a) State the Null Hypotheses
- b) State the decision rules
- c) Show the degrees of freedom
- d) Identify and use the correct formula and carry out computation

- e) State four findings
- f) Draw your conclusion
- g) Show your summary table.

Total: (20 marks)