

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST-1 EXAMINATIONS- SEPTEMBER-2019

B. Tech. IV Semester (Backlog & One-to-One)

COURSE CODE: 10B12MA421

MAX. MARKS: 25

COURSE NAME: BIostatISTICS

COURSE CREDITS: 03

MAX. TIME: 1:30 HRS

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Scientific calculator is allowed.

1. Consider the following data on the number of hours that 10 persons studied for a French test and their scores on the test are as follows:

Hours studied x	4	9	10	14	4	7	12	22	1	17
Test scores y	31	58	65	73	37	44	60	91	21	84

Construct a 95% confidence interval for β . [Given that $t_{0.025,8} = 2.306$] [CO-1][4]

2. The following data pertain to the demand for a product (in thousands of units) and its price (in Rupees) charged in five different market areas:

Price x	20	16	10	11	14
Demand y	22	41	120	89	56

Fit a nonlinear regression model of the form $y = \beta_0 + \beta_1 x + \beta_2 x^2$. [CO-2][4]

3. The following are measurements of the breaking strength of a certain kind of 2-inch cotton ribbon in pounds:

163 165 160 189 161 171 158 151 169 162
 163 139 172 165 148 166 172 163 187 173

Use the sign test to test the null hypothesis $\mu = 160$ against the alternative hypothesis $\mu > 160$ at the 0.05 level of significance. [Given that $B(19,15;0.5) = 0.9978$].

[CO-3][5]

[P.T.O.]