



EASTERN UNIVERSITY, SRI LANKA
DEPARTMENT OF MATHEMATICS
FIRST EXAMINATION IN SCIENCE – 2010/2011
SECOND SEMESTER – (August, 2015) (Apr. (May, 2017))
EXTCC 106 – BIO-STATISTICS

er all questions
ical tables and calculators will be provided

Time : **One** hour

b) The number of days that children were missing from school due to sickness in one year was recorded.

Number of days off sick	Frequency (f)
1-5	12
6-10	11
11-15	10
16-20	4
21-25	3

Find the mean, median and mode of the number of days off sick of the 40 children.

Marks obtained by 5 students in algebra (X) and trigonometry (Y) are given in following table:

Algebra (X)	Trigonometry (Y)	X^2	Y^2	XY
15	18	225	324	270
16	11	256	121	176
12	10	144	100	120
10	20	100	400	200
8	17	64	289	136

ain the relationship between algebra and trigonometry.

at a regression model, $Y = \beta_0 + \beta_1 X$, where β_0, β_1 are real constants, for the data in part (b), and check its significance at 5% significant level.

(P.T.O)

02. (a) (i) A coin is tossed five times. Find the probability that getting exactly three heads.
(ii) mean number of defective products produced in a factory in one day is 21. What is the probability that in a given day there are exactly 12 defective products?
- (b) Eggs laid by a particular chicken are known to have lengths normally distributed, with mean 6cm and standard deviation 1.4cm. What is the probability that an egg bigger than 8cm in length?
- (c) The Food and Nutrition Board of the National Academy of Sciences states that the recommended daily allowance (RDA) of iron for adult females under the age of 51 is 18 milligrams (mg). A sample of iron intake was obtained during a 24-hours period from 45 randomly selected adult females under the age of 51. It revealed that the sample mean (\bar{x}) was 14.68 mg. At the 1 percent significance level, does the data suggest that adult females under the age of 51 are, on average, getting less than the RDA of 18 mg of iron? Assume that the population standard deviation is 4.2 mg.