TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MATHEMATICS & PHYSICS

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN COMMUNITY HEALTH

DCHM/16M/YEAR2/SEMESTER2

AMA 2201: BIOSTATISTICS

SPECIAL/ SUPPLIMENTARY EXAMINATIONS

SERIES: SEPTEMBER 2018

TIME: 2 HOURS

DATE: Sep2018

Instructions to Candidates
You should have the following for this examination
-*Answer Booklet, examination pass and student ID*
This paper consists of Choose No questions. AttemptChoose instruction.
Do not write on the question paper.

Q1. (a) Define (i) A standardized normal distribution and give 3

characteristics.   (6mks)

(ii) A random sample of 100 items has an average

Mean of 7.5 and a population standard deviation

Of 2.3.Calculate the 95% confidence interval.   (6mks)

(b) Find the regression of y on x given   (8mks)

x	Y
1	2
2	4
3	6

(c) For a Binomial distribution function write down the expression

For p(x=x) and use it to find the probability of obtaining 5 heads in ten tosses of a fair coin   (11 mks)

Q2. (a) The average number of accidents at a railway crossing is 5 per Year. Calculate the probability that there are exactly 3 accidents Using the Poisson distribution model.   (5mks)

(b) Find (i) The regression line of y on x   (8mks)

(ii) The regression line of x on y given   (7mks)

x	1	2	3	4
y	2	4	5	7

Q3. (a) Suppose we wanted to determine whether a coin was fair and Balanced.Define the null hypothesis Ho and Alternative Hypothesis Ha   (8mks)

(b) Given

x	4	5	5	6	6	10	11	12	13	16	17	19
Y	17	17	13	17	12	4	9	12	8	3	5	7

Find the module-moment correlation coefficient for the data

(12mks)

Q4. (a) Define a type 1 and type 2 error in hypothesis testing.   (6mks)

(b) If there are n questions in a test and the probability of getting

The correct answer is $\frac{1}{3}$.Find the probability of getting 3 correct

Answers randomly selected.   (6mks)

© In a class of 100 students,80 passed in all subjects,10 failed in

One subject,7 failed in two subjects and 3 failed in three subjects

Find the probability distribution of the variable for the number of

Subjects a student from the class failed in.   (8mks)

Q5. (a) In a test scorecard in a school the grades are normally
distributed with a mean of 527 and a standard deviation of 112.What is

The probability of an individual scoring above 500 in the test?   (6mks)

(b) Define a Binomial probability distribution function and use it to

Find the probability of getting exactly 3 boys in a family of 5 kids.

                                                                    (7mks)

© Define (I) Correlation   (3mks)

(ii)Regression   (4mks)