(Knowledge for Development)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS

2016/2017 ACADEMIC YEAR

FIRST YEAR FIRST SEMESTER

SPECIAL/SUPPLEMENTARY EXAMINATION

FOR THE DIPLOMA IN EDUCATION

MATHEMATICS

COURSE CODE: EDM 102

COURSE TITLE: PROBABILITY AND STATISTICS I

DATE: 26/09/17 **TIME:** 11.30 AM- 1.30 PM

INSTRUCTIONS TO CANDIDATES

Answer Question One and Any other TWO Questions

TIME: 2 Hours

This Paper Consists of 4 Printed Pages. Please Turn Over.

QUESTION ONE(20 MARKS) (COMPULSORY)

1. Define the following terms
a. Census
b. Frequency
c. Probability
d. Sample space (4 Marks)

2. Distinguish the following terms as used in statistics
a. Qualitative data and Quantitative data
b. Compatible events and Incompatible events (4 marks)

3. with the help of diagrams, distinguish between a positive skewness and a negative skewness (4 marks)

4. Calculatethenumberofcasesbetween112and134fromthefollowing grouped frequency distribution: (4 marks)

Classlimit :	90–100	100–110	110–120	120–130	130–140	140–150	150–160
Frequency :	16	22	45	60	50	24	10

5. Given A = {1,2,5} and B = {3,4,5} are events for rolling a fair dice, find (i) A∩B and (ii) AUB (4 marks)

QUESTION TWO (20 MARKS)

Thefollowingfrequency distribution relatestotheweightsof40malestudentsinastateKibabii University.Thedatawere recordedtothenearestpound.

138	146	168	146	161
164	158	126	173	145
150	140	138	142	135
132	147	176	147	142
144	136	163	135	150
125	148	119	153	156
149	152	154	140	145
157	144	165	135	128

a. Usingaclasssizeof9,constructagroupedfrequency distributiontable

b. Using $\bar{X}=\frac{\sum_{i=1}^{n} fx}{n}$, calculate the Personian second coefficient of skewness

(20 marks)

QUESTION THREE (20 MARKS)

1. Define a sample space. Give a sample space for rolling a pair of fair dice ones (4 marks)
2. Let A an event. With the help of ven diagram, define a complement of event A (4 marks)
3. Two dices are rolled 50 times and their results recorded in the accompanying chart as sum of the numbers occurring in rolling the pair of dices

11	5	5	4	6	7	7	5	9	10
12	9	6	5	7	8	7	4	11	6
8	8	10	6	7	4	4	5	7	9
9	11	8	11	6	5	4	7	7	4
3	6	7	7	7	8	6	7	8	9

   a. What is their experimental probability of rolling 11? (2 Marks)
   b. What is their classical probability of rolling 11? (4 marks)
   c. How does the experimental and classical probabilities compare? (2 marks)
4. Find the probability that the sum of two faces is less than 10 when one rolls a pair of fair dice. (4 marks)

QUESTION FOUR (20 MARKS)

1. Define an 'Array' (1 mark)
2. Distinguish between classification and tabulation (4 marks)
3. State the primary rules of classification (7 marks)
4. State and explain the four modes of classification (8 marks)

QUESTION FIVE (20 MARKS)

1. Define the term 'Tabulation' of data (2 marks)
2. State four advantages of data tabulation (4 marks)
3. Thefollowingrelatestotheweightsof40malestudentsinastate university.Thedatawere recordedtothenearestpound.

138	146	168	146	161
164	158	126	173	145
150	140	138	142	135
132	147	176	147	142
144	136	163	135	150
125	148	119	153	156
149	152	154	140	145
157	144	165	135	128

a) Usinga class size of 9 and sample mean $\bar{X}=\frac{\sum_{i=1}^{n} fx}{n}$, find the modal value of the distribution and mean deviation using the mean (8 marks)

b) State four circumstances under which it is preferable to use median as a measure of central tendency in a distribution (4 marks)