



## TECHNICAL UNIVERSITY OF MOMBASA

### AMA 4107: PROBABILITY & STATISTICS I

#### ASSIGNMENT

a) Explain two uses of statistics to a business organization (2mks)

b) The following data is extracted from sales record of a shoe Company. Calculate

Size	3-4	4-5	5-6	6-7	7-8	8-9	9-10
Freq	3	7	22	60	85	32	8

i. The mean size (4mks)

ii. Mode (4mks)

iii. Median (4mks)

c) Given a bag containing 6 red marbles and 4 blue marbles, I draw a marble at random from the bag and then, without replacing the first marble, I draw a second marble. What is the probability that both marbles are red? (4mrks)

d) Draw an Ogive for the following frequency distribution and also find its median from the graph. (6mks)

Marks	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60
Number of Students	7	10	23	51	6	3

e) A group of twelve children participated in a psychological study designed to assess the relationship, if any, between age,  $x$  years, and average total sleep time (ATST),  $y$  minutes. To obtain a measure for ATST, recordings were taken on each child on five consecutive nights and then averaged. The results obtained are shown in the table. 6mks

Age( $x$ yrs)	4.4	6.7	10.5	9.6	12.4	5.5	11.1	8.6	14	10.1	7.2	7.9
ATST( $y$ minutes)	586	565	515	532	478	560	493	533	575	490	530	515

Calculate the value of the product moment correlation coefficient between  $x$  and  $y$ .