



KENYATTA UNIVERSITY
UNIVERSITY EXAMINATIONS 2017/2018
DIGITAL SCHOOL OF VIRTUAL AND OPEN LEARNING
SECOND TRIMESTER EXAMINATION FOR THE DEGREE OF
BACHELOR OF ECONOMICS
EES 201: STATISTICS FOR ECONOMIST 1

DATE: Friday, 22nd June 2018

TIME: 11.00 a.m. - 1.00 p.m.

INSTRUCTIONS:

QUESTION ONE

a) The following frequency table shows the monthly wages of 100 workers in a certain factory

Wages in Shs.	No. of Workers
1200-1300	2
1400-1500	5
1600-1700	9
1800-1900	15
2000-2100	19
2200-2300	21
2400-2500	14
2600-2700	8
2800-2900	4
3000-3100	2
3200-3300	1
	<u>100</u>

Required:-

i) Present this information in Histograms and estimate the mode graphically (6 marks)

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- ii) Using your results in (i) above, draw frequency curve. (3 marks)
- iii) Find the standard deviation of this distribution (6 marks)
- iv) What is the probability that an employee picked randomly earns a wage of less than shs 2100? (3 marks)
- v) List the characteristics of binomial distribution. (4 marks)
- vi) Why would an economist prefer sampling to census? (4 marks)
- vii) Distinguish between mutually exclusive and independent events using relevant economics related examples (4 marks)

QUESTION TWO

- a) Distinguish between the following terms using relevant illustrations:
- Z chart and Lorenz curve
 - Geometric and arithmetic mean
 - Binomial and poison distribution
 - Coefficient of variation and variance
- b) Three firms producing microchips at Kasarani, Nairobi, reports the following values for the number of employees, average daily output, and standard deviation in daily output over the past 100 days.

Firm	Employees	Output	Standard deviations
1	80	95	24
2	48	237	28
3	72	290	128

- i) Which firm seems to be most consistent in its level of output? Explain (2 marks)
- ii) Assuming the data for all three firms are normally distributed, use empirical Rule to determine the range of output for each for each firm on approximately 68 of the 100 days and 95 of the 100 days. (3 marks)
- iii) Which firm had the highest average level of output per employee? What was that average? (2 marks)
- c) Explain qualities of a good measure of dispersion (5 marks)

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QUESTION THREE

- a) Trucks arrive at a loading dock at the mean rate of 1.5 per hour. What is the probability that no more than 2 hours will lapse between the arrivals of two successive trucks? (3 marks)
- b) What parameters determine the location and shape of a normal distribution? Illustrate using diagram (6 marks)
- c) Given that $X \sim N(30, 5)$, find the probability that
- i) $X \geq 32$ (2 marks)
 - ii) $X \geq 22$ (2 marks)
 - iii) $27 \leq X \leq 33$ (2 marks)
- d) Explain any five functions of statistics in real life (5 marks)

QUESTION FOUR

- a) A study was done to establish the percentage of the students infected with the cholera. The results indicated that 60% of the students suffered from the disease. A sample of 8 students was later taken and tested for the disease. Find the probability that the following outcomes were observed.
- i) No one had the cholera (2 marks)
 - ii) Only two students had the cholera (2 marks)
 - iii) At most two students had the cholera (2 marks)
 - iv) Three or four students had the cholera (2 marks)
- b) A city campus student taking B.Com is undertaking attachment which involves conducting certain economic research. Advise him on the steps to be followed for that statistical enquiry to be successful. (10 marks)