

SECTION A Answer all questions in this section (30 marks)

1. a) What is a sample size? (1 mark)
b) Differentiate between experimental unit and experimental error (2 marks)
2. Define the following terms as used in biostatistics (5 marks)
a) a statistic
b) a parameter
c) relative frequency
d) variable
e) bivariate variable
- 3.a) what is kurtosis? (1 mark)
b) State three element of normal curve (3 marks)
c) Draw a graph to show different types of kurtosis (3 marks)
4. a) Give three examples of measures of dispersion (3 marks)
b) Three examples of measures of central tendency (3 marks)
c) Identify the members of the lower quartile from the data below by showing. (2 marks)
8,2,3,6,5,7,4
- 5.a) Differentiate between discrete variable and continuous variables (2 marks)
b) The probability that koen wins a game is $1/5$, he plays until he wins, what is the probability that he will not play the fifth round? (5 marks)

SECTION B :answer any two questions from this section. (30 marks)

- 1.a) Use binomial expansion to evaluate $(1+0.03)^5$.
b) The probability of a husband and a wife will be alive 25 years from now is 0.8 and 0.9 respectively. Find the probability that in 25 years time:
i. Both will be live (4 mks)
ii. Neither will be alive (2 mks)
iii. One will be alive (2 mks)
iv. At least one will be alive (2 mks)
- 2.a) using Sturge's rule, draw a frequency distribution table from the following data: (9mks)
- | | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|
| 22 | 27 | 15 | 26 | 20 | 20 | 23 | 18 | 28 | 23 | 25 | 22 |
| 19 | 29 | 24 | 31 | 16 | 27 | 21 | 30 | 37 | 25 | 36 | 30 |
| 30 | 33 | 28 | 38 | 33 | 35 | 32 | 29 | 39 | 34 | 21 | 26 |
| 33 | 32 | 30 | 14 | 20 | 40 | 30 | 30 | 20 | 30 | 20 | 30 |

b) Use the table drawn above to calculate the standard error. (6 marks)

3 a) Explain three conditions that form Bernoulli process in sequence of Bernoulli's Trials (6 marks)

b) Give nine statements which describe the Poisson process (9 marks)

4. a) The following masses in kgs of 20 patients were:

20 26 24 28 32 29 35 21 32 29 35 24
29 20 24 29 28 26 32 35

Calculate the quartile deviation (6 marks)

b) The table below shows height measured in the nearest cm 25 patients

Height cm	30-34	35-39	40-44	45-49	50-54	55-59
Frequency	2	4	9	8	1	1

i. State the median class

ii. Calculate the mean height using assumed mean of 40

iii. Calculate the standard deviation

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