****

**GARISSA UNIVERSITY**

**UNIVERSITY EXAMINATION 2020/2021 ACADEMIC YEAR THREE**

**SECOND SEMESTER EXAMINATION**

**SCHOOL OF BUSINESS AND ECONOMICS**

**FOR THE DEGREE OF BACHELOR OF BUSINESS MANAGEMENT**

**COURSE CODE: BBM 221**

**COURSE TITLE: BUSINESS STATISTICS**

**EXAMINATION DURATION: 2 HOURS**

**DATE: 08/04/2021 TIME: 09.00-11.00 AM**

**INSTRUCTION TO CANDIDATES**

* **The examination has FIVE (5) questions**
* **Question ONE (1) is COMPULSORY**
* **Choose any other TWO (2) questions from the remaining FOUR (4) questions**
* **Use sketch diagrams to illustrate your answer whenever necessary**
* **Do not carry mobile phones or any other written materials in examination room**
* **Do not write on this paper**

**This paper consists of FOUR (4) printed pages *please turn over***

**QUESTION ONE (COMPULSORY)**

1. Define
2. a primary data (1 mark)
3. State two methods of collecting the data in a (i) above (2marks)
4. Given a set of data; 2, 9,8,3,5
5. Calculate the arithmetic mean (2 marks)
6. Calculate the geometric mean (2 marks)
7. Calculate the harmonic mean (2 marks)
8. State the median (1 mark
9. Calculate the standard deviation. (3 marks)

**iv)** Using a clearly labeled diagram, show the position of the mode, mean and median of a positively skewed distribution (3marks)

 b) State four reasons why it is important to study a sample instead of the whole population 4marks

c) State three characteristics of the median as a measure of central tendency. (3 marks)

d) Given the information below on the marks obtained by students in your school

|  |  |
| --- | --- |
| Score  | Frequency  |
| 2  | 1  |
| 3  | 2  |
| 4  | 5  |
| 5  | 6  |
| 6  | 3  |
| 7  | 2  |
| 8  | 1  |

Find probability of

1. A student scoring 2 (1mark)
2. A student scoring more than 5 (3marks)
3. A student scoring less than 5 (3marks)

**QUESTION TWO (20MARKS)**

1. what is meant by the term probability (2marks)
2. why do we study probability in business (3 marks)

A) Given that a particular type of seedling, 3 out of 5 them transplanted will survive. Suppose two of the seedlings are picked at random, what is the probability that:

(i) Both of them survived 3marks

(ii) The first survives and the second does not survive. 4 marks

 (iii) The first does not survive and the second survives 4 marks

(iv) None of the them survives 4 marks

Let S represents survival and f represents non - survival.

|  |  |  |
| --- | --- | --- |
| Commodities  | Price in 2020 in kshs | Price in 2021 in kshs |
| Apple | 35 | 60 |
| Mango | 30 | 45 |
| Watermelon | 5 | 10 |

**QUESTION THREE (20MARKS)**

1. Discuss the various methods of data collection. Indicate the situations in which each of these methods should be used (10 marks)
2. Explain three ways of data representation used in an organization (6marks)
3. Find the range and mean deviation of the data below (4marks)

30, 35, 20, 85, 60

**QUESTION FOUR (20 MARKS)**

The data given below represent the I.Q. of 160 students.

|  |  |
| --- | --- |
| Class interval | frequency |
| 60 - 70 | 2 |
| 70 – 80 | 7 |
| 80 – 90 | 12 |
| 90 – 100 | 28 |
| 100 – 110 | 42 |
| 110 – 120 | 36 |
| 120 - 130 | 18 |
| 130 – 140 | 10 |
| 140 – 150 | 4 |
| 150 - 160 | 1 |

Calculate

1. Mean (4 marks)
2. Median (4marks)
3. Find a modal class (2marks)
4. Standard deviation (6marks)
5. State two Merits and two demerits of median value (4marks)

**QUESTION FIVE (20 MARKS)**

1. The mean of a certain number of observations is 40. If two or more items with values 50 and 64 are added to this data, the mean rises to 42. Find the number of items in the original data.(6marks)
2. (I) What is sampling in business research (2marks)

(II) Explain three sampling techniques used in business statistics (6marks)

1. Calculate i) the price index number by the simple average of relative’s methods from the following data (price per kg). (5 marks)

|  |  |  |
| --- | --- | --- |
| Commoditie | Price In 2022 in Kshs | Price in 2021 in kshs |
| Apple | 35 | 60 |
| Mango | 30 | 45 |
| Watermelon | 5 | 10 |

ii) State one limitation of the simple average of relatives’ methods. (1mark)