

**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**SCHOOL OF MATHEMATICS AND ACTURIAL SCIENCES**

**UNIVERSITY EXAMINATION FOR CERTIFICATE IN BRIDGING IN MATHEMATICS**

**NAIROBI CITY CAMPUS**

**SEMESTER1 2016/2017**

**COURSE TITLE: PROBABILITY AND STATISTICS**

**COURSE CODE: SMA 0104**

**TIME 1 HOUR 30 MINUTES**

**EXAM VENUE: 9TH FLOOR**

**DATE: 15/12/2016**

**TIME: 2 HOURS**

**EXAM SESSION: 9 AM –10:30 AM**

**INSTRUCTIONS**

1. Answer question **one** (compulsory) and any other **two questions**
2. Candidates are advised not to write on the question paper
3. Candidates must hand in their answer booklets to the invigilator while in the examination room.

**Question One**

1. Define the term statistics clearly pointing out the four stages involved (4 marks)
2. Distinguish between the following terminologies:
3. descriptive statistics and inferential statistics (4 marks)
4. population and a sample (4 marks)
5. Nominal variable and ordinal variable (4 marks)
6. Explain four reasons behind sampling (8 marks)
7. Consider the data below, and use it to construct a ungrouped frequency distribution table (6 marks)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 16 | 14 | 15 | 13 | 14 | 16 | 15 | 15 | 14 | 12 |
| 17 | 16 | 13 | 16 | 15 | 14 | 18 | 13 | 15 | 17 |

**Question Two**

1. Using relevant examples explain the following terminologies as used in statistics
2. Median (3 marks)
3. Mode (2 marks)
4. Kamau Fashion store has recorded the sales made during a particular day, and the results are given in the following table:

|  |  |
| --- | --- |
| Value of sales (sh) | Number of sales |
| 0- 20 | 8 |
| 20–40 | 9 |
| 40–60 | 12 |
| 60–80 | 4 |
| 80–100 | 2 |
| 100-120 | 4 |

1. Calculate the mean value (5 marks)
2. Calculate the mode (5 marks)
3. Calculate the median (5 marks)

**Question Three**

Use the table below to compute:

1. an order 4 moving averages in temperature (10 marks)
2. center 4 moving averages (10 marks)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Months** | Jan | Feb | March | April | May | June | July | August | Sep | Oct | Nov | Dec |
| **Temp**  | 27 | 30 | 25 | 22 | 20 | 17 | 15 | 20 | 22 | 28 | 30 | 26 |

**Question Four**

Discuss the advantages and disadvantages of the following

1. observation as a method of data collection (10 marks)
2. Use of mode in data analysis (10 marks)