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MAASAI MARA UNIVERSITY

**REGULAR UNIVERSITY EXAMINATIONS**

**2016/2017 ACADEMIC YEAR**

**SECOND YEAR FIRST SEMESTER**

**SCHOOL OF BUSINESS AND ECONOMICS**

**BACHELOR OF BUSINESS MANAGEMENT**

**COURSE CODE: BBM 204**

**COURSE TITLE: BUSINESS STATISTICS**

**DATE: 28TH APRIL 2017 TIME: 2.00PM-4.00PM**

**INSTRUCTIONS TO CANDIDATES**

* **Answer question ONE (compulsory) and any other THREE**
* **Question one carries 25 marks**
* **All other questions carry 15 marks**

 This paper consists of 4 printed pages. Please turn over

**QUESTION ONE**

a) Differentiate giving examples the following data types;

 i) Quantitative data **(2marks)**

 ii) Discrete data **(2marks)**

 iii) Continuous data **(2marks)**

 iv) Qualitative data  **(2marks)**

 b) Differentiate between the following terms as used in statistics

 i) Type I and Type II error **(2marks)**

 ii) Two tailed and one tailed tests **(2marks)**

c) A consultancy firm Highlands Incorporation has been requested to investigate the performance of supermarkets in your locality. Discuss the steps it should take during the investigation to help the client to make an appropriate decision. **(10marks)**

d) Distinguish between the primary and secondary data highlighting the main sources of data in each area **(3marks)**

**QUESTION TWO**

a) The data below represent the ages in years of a sample of 50 statistics students

20.9 33.4 18.7 24.2 22.1 18.9 21.9 20.5 21.9 37.3 57.2 25.3 24.6 29.0 26.3 19.1 48.7 23.5 23.1 28.6 21.3 22.4 22.3 20.0 30.3 31.7 34.3 28.5 36.1 32.6 33.7 19.6 18.7 24.3 27.1 20.7 22.2 19.2

26.5 27.4 22.8 51.3 44.4 22.9 20.6 32.8 27.3 23.5 23.8 22.4

 i) Construct an appropriate class interval frequency distribution **(3marks)**

 ii) Construct a histogram for the distribution **(3marks)**

 iii) Include a frequency polygon for the distribution **(2marks)**

b) A business partner is to meet me by a given time. The probability of him being punctual if he travels by bus is 0.2, if he travels by train 0.5 and if he is given a lift by a friend’s car 0.9. The probabilities of him travelling by bus, train and the car are 0.3, 0.4 and 0.3 respectively. What is the probability that he will arrive on time **(7 marks)**

**QUESTION THREE**

a) Differentiate between the following terms as used in statistics;

 i) Descriptive statistics and Inferential statistics **(2marks)**

 ii) Skewness and Kurtosis **(2marks)**

b) Briefly explain the importance of time series analysis to a business organization **(4marks)**

c) The data below gives the pattern of overtime work per week done by 100 employees of a company:

|  |  |
| --- | --- |
| Overtime hours | Number of employees |
| 10-1415-1920-2425-2930-3435-39 | 1120352086 |

**Determine;**

 i) The mean **(2marks)**

 ii) The median **(2marks)**

 iii) The standard deviation **(3marks)**

**QUESTION FOUR**

a) Briefly explain the main reasons for sampling in statistics **(5marks)**

b) The data below represent the lifespan of an electric appliance in months produced at two different factories in China and Japan. Determine the coefficient of variation of the factory producing more dependable appliances i.e. the most dependable factory; **(10marks)**

|  |  |
| --- | --- |
|  | Number of electrical appliance |
| Life span | Chinese | Japanese |
| 2-4 | 8 | 2 |
| 4-6 | 10 | 25 |
| 6-8 | 20 | 3 |
| 8-10 | 2 | 10 |

**QUESTION FIVE**

The waiting time x in minutes needed to vote in a certain polling station for a sample of 50 voters at the concluded general elections was as below. Using the Pearson coefficient of skewness, determine the degree and direction of skewness of the distribution and interpret the information **(15marks)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| X | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 |
| freq | 4 | 10 | 20 | 8 | 8 |