

**W1-2-60-1-6**

**JOMO KENYATTA UNIVERSITY**

**OF**

**AGRICULTURE AND TECHNOLOGY**

**UNIVERSITY EXAMINATIONS 2014/2015**

**YEAR 1 SEMESTER II EXAMINATION FOR THE DEGREE OF BACHELOR OF COMMERCE**

**HBC 2110: INTRODUCTION TO BUSINESS STATISTICS**

**DATE: AUGUST 2015 TIME: 2 HOURS**

**INSTRUCTIONS**: ANSWER QUESTION **ONE (COMPULSORY)** AND ANY OTHER **TWO** QUESTIONS.

**QUESTION ONE**

1. Explain the meaning and differences between Descriptive and inferential statistics. (5marks)
2. Describe briefly the properties of a good average. (5marks)
3. The following data represents marks obtained by first year Bachelors of Commerce students in Communication Skill test:

60 64 68 72 78 71 48 52

58 43 80 86 70 75 45

Calculate

1. The mean mark (2marks)
2. The median mark (2marks)
3. The mode mark (1mark)
4. The standard deviation (3marks)
5. The daily income of ten families of a particular place is given below:

(Sh’000’) 85 701 15 75 500 8 45 250 40 36

Calculate the geometric mean (6marks)

1. The following values were observed from a population

30 32 40 48 50

Compute the variance for this data (6marks)

**QUESTION TWO**

1. i. Explain the significance of Kurtosis (5marks)

ii. Distinguish between Discrete and Continuous data (5marks)

1. i. What is the probability that a card chosen at random from a pack of 52 well shuffled deck will either be a king or a heart? (5marks)

ii. Explain the following terms used in probability theory

1. Independent and dependent events
2. Equally likely events
3. Exhaustive events
4. Compound events (5marks)

**QUESTION THREE**

1. Explain the four basic components of a time series analysis (10marks)
2. Construct index numbers of price from the following data by applying
3. Laspeyre’s formula (5marks)
4. Paasche’s formula (5marks)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Commodities | 2013 | | 2014 | |
| Price | Quantity | Price | Quantity |
| A  B  C  D | 2  5  4  2 | 8  10  14  19 | 4  6  5  2 | 6  5  10  13 |

**QUESTION FOUR**

From the adult male population of four large cities, random samples of sizes given below were taken and the number of married and single men recorded. Do the data indicate any significant variations among the cities in the tendency of men to marry? (20marks)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| City | A | B | C | D | Total |
| Married | 137 | 164 | 152 | 147 | 600 |
| Single | 32 | 57 | 56 | 35 | 180 |
| Total | 169 | 221 | 208 | 182 | 780 |

**QUESTION FIVE**

1. i. Explain the difference between multiplication and additive models as used in time series (5marks)

ii. State the conditions under which each model is used. (5marks)

1. The following data relates to business turnover and staff of fast moving consumer goods company EAI ltd

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Year | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| Business turn over in millions of shillings | 45 | 50 | 60 | 75 | 80 | 110 | 150 | 170 |
| staff | 2,600 | 3,000 | 3,100 | 3,530 | 3,850 | 4,300 | 5,870 | 7,150 |

Required:

1. Fit an appropriate regression equation (8marks)
2. Estimate the staff requirements when business turnover reaches sh200 millions (2marks)