

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

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

# **UNIVERSITY EXAMINATIONS 2014/2015**

FIRST YEAR SECOND SEMESTER EXAMINATIONS FOR THE DEGREE OF BACHELOR OF COMMERCE/

BACHELOR OF BUSINESS INFORMATION TECHNOLOGY/

BACHELOR OF SUPPLY CHAIN MANAGEMENT

**HBC 2121 / 2106: INTRODUCTION TO BUSINESS STATISTICS**

**DATE: APRIL 2015 TIME: 2 HOURS**

**INSTRUCTIONS:**

**ANSWER QUESTION ONE AND ANY OTHER TWO QUESTIONS**

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**QUESTION ONE**

1. The following table show the marks scored by 160 students in a statistics examination

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Marks | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 |
| No. of students | 2 | 7 | 21 | 25 | 30 | 35 | 28 | 12 |

Use the above data to estimate

1. The quartiles [6 marks]
2. Quartile deviation [2 marks]
3. A research student was not in a position to collect data directly from the fields. The only option left to him was to use secondary data:
4. Describe two sources he would use [3 marks]
5. What are the advantages of using this method of data collection? [4 marks]
6. What are the drawbacks of using this method of data collection [4 marks]
7. Describe the different components of time series [4 marks]
8. A piece of electronic equipment has tow essential parts, A and B. in the past , part A has failed 40% of the time, and part B 50% of the time. Parts A and B operate independently. Assume that both parts must operate to enable the equipment to function. What is the probability that the equipment will function? [3 marks]
9. Why is the arithmetic mean frequently used as an average? [4 marks]

**QUESTION TWO**

The table below shows the number of letters collected from the post office by a

school driver during a school year

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Letters per day | 6-10 | 11-15 | 16-20 | 21-25 | 26-30 | 31-35 | 36-40 | 41-45 | 46-50 | 51-55 |
| No. of students | 5 | 19 | 21 | 23 | 25 | 27 | 20 | 25 | 13 | 12 |

Required:

1. Calculate the mean number of letters using the short cut method. [5 marks]
2. Calculate the 50th percentile [4 marks]
3. Calculate the coefficient of variation [5 marks]
4. Estimate the mode using the graphical method [4 marks]
5. What are the elements of the mode as an average? [2 marks]

**QUESTION THREE**

The following are the data on business turnover and staff of a company for eight

years from 2000 to 2007.

Year Business turnover staff

(shs millions)

2000 45 2600

2001 50 3000

2002 60 3100

2003 75 3530

2004 80 3850

2005 110 4300

2006 150 5870

2007 170 7150

Fit a regression equation to estimate manpower in terms of business turnover. Estimate the staff requirement when the business turnover reaches shs. 200 million [20 marks]

**QUESTION FOUR**

Four machines A, B, C and D are used to manufacture certain machine parts

which are classified as first grade, second grade and third grade. The quality

control engineer wants to test whether the quality of the product from the four

machines is same. Use the data to test at 95% level of significance [20 marks]

machine

Grades A B C D Total

First 620 750 400 530 2300

Second 130 200 140 130 600

Third 50 50 60 40 200

Total 800 1000 600 700 3100

**QUESTION FIVE**

1. Compute chain base ………… numbers from the given data [5 marks]

Year 1991 1992 1993 1994 1995 1996 1997

Consumption 149 156 137 162 149 160 165

(shs 000)

1. Draw the trend by semi-average method for the following data [5 marks]

Year Value

1987 14

1988 16

1989 18

1990 24

1991 30

1992 42

1993 50

1994 40

1995 50

1996 52

1. Describe five methods of data collection [5 marks]
2. (i) In how many ways can ten books be arranged on a shelf taking three books at a time if order is important? [3 marks]

(ii) In how many ways can Joyce choose three friends to go for a party with if she has five friends to choose from. [2 marks]