## University Examinations 2011/2012

FIRST YEAR, FIRST SEMESTER EXAMINATIONS FOR THE DEGREE OF
BACHELOR OF BUSINESS INFORMATION TECHNOLOGY AND BACHELOR OF
COMMERCE

**HBC 2121: INTRODUCTION TO STATISTICS**

**DATE: APRIL 2012**                                          **TIME: 2 HOURS**

**INSTRUCTIONS:** *Answer question **one** and any other **two** questions*

### QUESTION ONE (30 MAKRS)

a.  Distinguish between descriptive and inferential statistics              (2 Marks)
b.  Highlight three functions of statistics                                 (3  Marks)
c.  Using good illustrations distinguish between Skewness and Kurtosis      ( 4 Marks)
d.  An article manufactured by a company consists of two parts A and B. In the process of manufacture of part A, 9 out 100 are likely to be defective. Similarly, 5 out 100 are likely to be defective in the manufacture of part B. calculate the probability that the assembled part will not be defective.                                  (4 Marks)
e.  Discuss any four stages in a statistical investigation                  ( 4 Marks)
f.  Highlight the purpose of classifying statistical data                   (3 Marks)
g.  From the prices  of shares of x  and y below find out which is more stable in  value:

| X | 35 | 54 | 52 | 53 | 56 | 58 | 52 | 50 | 51 | 49 |
|---|----|----|----|----|----|----|----|----|----|----|
| Y | 108 | 1078 | 105 | 105 | 106 | 107 | 104 | 103 | 104 | 101 |

### QUESTION TWO (20 MARKS)

a.  Distinguish between correlation and regression  analysis                (6 Marks)
b.  Computed Karl Pearson's coefficient of correlation between per capital National income and per capital consumer expenditure from the data given below. Also compute coefficient of determination and interpret the results        (14 Marks)

| Years | Per capita national income | Per capita consumer expenditure |
|-------|---------------------------|--------------------------------|
| 2001 | 249 | 237 |
| 2002 | 251 | 238 |
| 2003 | 248 | 236 |
| 2004 | 252 | 240 |
| 2005 | 258 | 245 |
| 2006 | 269 | 255 |
| 2007 | 271 | 254 |
| 2008 | 272 | 252 |
| 2009 | 280 | 258 |
| 2010 | 275 | 251 |

## QUESTION THREE (20 MARKS)

a. Describe the characteristics of a good measure of average (4 Marks)

b. The data below relate to weekly wages of workers in a large textile industry

| Weekly earnings (£) | 66-67 | 67-68 | 68-69 | 69-70 | 70-71 | 71-72 |
|---------------------|-------|-------|-------|-------|-------|-------|
| No of persons | 15 | 24 | 40 | 20 | 14 | 11 |

Required:

Compute:

i. Mean weekly wage (4 Marks)
ii. Mode (4 Marks)
iii. Standard deviation (4 Marks)
iv. Pearsons coefficient of Skewness and comment on the distribution of wages (4 Marks)

## QUESTION FOUR (20 MARKS)

a. Highlight two uses of index numbers in business and economics (2 Marks)

b. The data below relate to prices and qualities of four commodities produced in Meru County over a period of two years.

|               | 2009       |        | 2010       |        |
|---------------|------------|--------|------------|--------|
| Commodity     | quantity   | price  | quantity   | price  |
| A             | 8          | 4      | 10         | 9      |
| B             | 7          | 3      | 8          | 5      |
| C             | 6          | 4      | 5          | 8      |
| D             | 5          | 2      | 7          | 4      |

Use the data to compute:

   i.   Laspeyres price index                                          (3 Marks)
  ii.   Paasche price index                                           (3 Marks)
 iii.   Fishers ideal rice index                                 (3 Marks)

   c.   The following table gives the aptitude test scores and productivity indices of 10 workers selected at random.

| Aptitude scores (x)     | 60 | 62 | 65 | 70 | 72 | 48 | 53 | 73 | 65 | 82 |
|-------------------------|----|----|----|----|----|----|----|----|----|----|
| Productivity index y    | 68 | 60 | 62 | 80 | 85 | 40 | 52 | 62 | 60 | 81 |

Required:

Calculate the regression equation of y on x and estimate the productivity index of a worker whose test score is 92.             (9 Marks)