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|---|---|---|---|
| **FACULTY** | AGRICULTURE, ENGINEERING AND NATURAL RESOURCES | | |
| **SCHOOL** | AGRICULTURE AND FISHERIES SCIENCES | | |
| **DEPARTMENT** | ANIMAL PRODUCTION, AGRIBUSINESS & ECONOMICS | | |
| **SUBJECT** | AGRICULTURAL PRICE ANALYSIS AND FORECASTING | | |
| **SUBJECT CODE** | AAEA 3782 | | |
| **DATE** | NOVEMBER 2023 | | |
| **DURATION** | **3 HOURS** | **MARKS** | **100** |

## SECOND OPPORTUNITY EXAMINATION QUESTION PAPER

**Examiner:** Dr. K. Kalundu

**Internal Moderator:** Professor H.J. Sartorius von Bach

This question paper consists of three (3) pages including this front page

***Instructions***

- Answer all questions
- Please write legibly and number your questions clearly
- Show your calculations to two decimal places

**UNIVERSITY OF NAMIBIA EXAMINATIONS**

## SECTION A

## 40 MARKS

a) Using your commodity (for the term assignment) develop a flow diagram indicating the variables that may affect its price formation process (12)

b) Explain the following

i) Export and import parity price. (4)

ii) Producer price's share in retail price (4)

c) Outline the procedures you would follow if you analyse the supply for maize in Namibia. (20)

## SECTION B

## 60 MARKS

**QUESTION 1** **[30 MARKS]**

a) Use the data provided in the table below to answer the following question.

| Year | CPI 2015 =100 | Current Price of beef(c/kg) | Median disposable personal income (N$) | Real Price of Beef (c/kg) | Deflated income (N$) |
|---|---|---|---|---|---|
| 2004 | 42.77 | 168.2 | 5118 | - | - |
| 2005 | 45.13 | 168.2 | 5073 | - | - |
| 2006 | 52.12 | 161.8 | 5026 | - | - |
| 2007 | 56.40 | 157.2 | 5131 | - | - |
| 2008 | 57.74 | 155.9 | 5250 | - | - |
| 2009 | 59.08 | 157.2 | 5137 | - | - |
| 2010 | 63.28 | 152.9 | 5138 | - | - |
| 2011 | 69.60 | 151.9 | 5133 | - | - |
| 2012 | 79.75 | 147.4 | 5152 | - | - |
| 2013 | 95.88 | 160.4 | 5180 | - | - |
| 2014 | 106.00 | 168.4 | 5189 | - | - |
| 2015 | 100.00 | 172.1 | 5213 | - | - |
| 2016 | 112.47 | 159.7 | 5219 | - | - |
| 2017 | 96.71 | 152.9 | 5247 | - | - |
| 2018 | 100.94 | 149.9 | 5301 | - | - |
| 2019 | 105.18 | 144.6 | 5313 | - | - |

i). Convert the base period from $CPI_{2015=100}$ to $CPI_{2018=100}$. $(16 \times {}^{1}/_{2})$

ii). Calculate and explain the real price (c/kg) for beef after converting the CPI all the years. $(16 \times {}^{1}/_{2})$

iii). Calculate and explain the real disposable personal income for all the years.

$(16 \times {}^{1}/_{2})$

iv). Explain the term general price level. Show your understanding by providing a practical example. (6)

**QUESTION 2** **[30 MARKS]**

a) Suppose you measuring cyclical deviation from the estimated trend equation, where the equation is derived using log transformation: $LogP_i = 2.2235 - 0.0305LogT_i$, where $T_i = 1$ in 2004).

| $T_i$ | Current Price of beef (c/kg) | $LogT_i$ | $LogP_i$ | Expected Prices | Difference in Actual and expected (c/kg) |
|---|---|---|---|---|---|
| 1 | 168.2 | 0.0000 | 2.2258 | - | - |
| 2 | 168.2 | 0.3010 | 2.2258 | - | - |
| 3 | 161.8 | 0.4771 | 2.2090 | - | - |
| 4 | 157.2 | 0.6021 | 2.1965 | - | - |
| 5 | 155.9 | 0.6990 | 2.1928 | - | - |
| 6 | 157.2 | 0.7782 | 2.1965 | - | - |
| 7 | 152.9 | 0.8451 | 2.1844 | - | - |
| 8 | 151.9 | 0.9031 | 2.1816 | - | - |
| 9 | 147.4 | 0.9542 | 2.1685 | - | - |
| 10 | 160.4 | 1.0000 | 2.2052 | - | - |
| 11 | 168.4 | 1.0414 | 2.2263 | - | - |
| 12 | 172.1 | 1.0792 | 2.2358 | - | - |
| 13 | 159.7 | 1.1139 | 2.2033 | - | - |
| 14 | 152.9 | 1.1461 | 2.1844 | - | - |
| 15 | 149.9 | 1.1761 | 2.1758 | - | - |
| 16 | 144.6 | 1.2041 | 2.1602 | - | - |

i) Calculate and convert from natural logarithms the expected real prices (c/kg) from 2004 to 2019. (16)

ii) Calculate the cyclical deviations from the calculated trend. (14)

**THE END**