

DUE DATE: 10TH DECEMBER, 2020

MARKS: 15

The Case:

The information about their nominal prices and CPI from 2018 to 2020 is given below:

Item	Unit	Year	Nominal Price	CPI	Real price
Milk	Liter	Jun - 2018	85.00	283.97	85
		Jun - 2019	90.00	296.50	86.19
		Jun - 2020	97.50	322.10	85.6

Requirements:

Keeping in mind the above scenario, solve the following questions.

By assuming June-2018 as the base year, find the real price of milk, eggs, and tea in each year

Working for Milk year June -2018 :

$$\text{Real Price (jun-2018)} = \frac{\text{CPI}(\text{base year})}{\text{CPI}(\text{Jun-2018})} * \text{Nominal Price}(\text{jun-2018})$$

$$= \frac{283.97}{283.97} * 85$$

$$= 1.0 * 85$$

$$= \text{Rs. 85}$$

Working for Milk year June -2019 :

$$\begin{aligned} \text{Real Price(jun-2019)} &= \\ &= \frac{\text{CPI}(\text{base year}-2018)}{\text{CPI}(\text{Jun}-2019)} * \text{Nominal Price}(\text{jun}-2019) \end{aligned}$$

$$= \frac{283.97}{296.50} * 90$$

$$= 0.9577 * 90$$

$$= \text{Rs. } 86.19$$

Working for Milk year june -2020 :

$$\text{Real Price(jun-2020)} = \frac{\text{CPI}(\text{base year})}{\text{CPI}(\text{Jun}-2020)} * \text{Nominal Price}(\text{june}-2020)$$

$$= \frac{283.97}{322.10} * 97.50$$

$$= 0.8816 * 97.50$$

$$= \text{Rs. } 85.96$$

Item	Unit	Year	Nominal Price	CPI	Real price
Eggs	Dozen	Jun - 2018	83.13	182.83	$= (182.83/182.83) * 83.13$ $= 1 * 83.13$ $= \text{Rs. } 83.13$
		Jun - 2019	79.38	172.61	$= (182.83/172.61) * 79.38$ $= 1.059 * 79.38$ $= \text{Rs. } 84.07$
		Jun - 2020	115.63	229.01	$= (182.83/229.01) * 115.63$ $= 0.79 * 115.63$ $= \text{Rs. } 91.35$

Item	Unit	Year	Nominal Price	CPI	Real price
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Tea	Packet	Jun - 2018	205.26	304.69	= (304.69/304.69) * 205.26 = 1 * 205.26 = Rs. 205.26
		Jun - 2019	221.05	322.11	= (304.69/322.11) * 221.05 = 9459 * 221.05 = Rs. 209.09
		Jun - 2020	242.10	350.92	= (304.69/350.92) * 242.10 = 0.8682 * 242.10 = Rs. 210.20

a. .

b. If the base year bundle has 10 liter milk, 3 dozen eggs, and 2 packets of tea then find the Laspeyres index by assuming June-2018 as the base year and June-2020 as

the current year.

Base year Bundles:

Milk Quantity (base year), Q_M = 10 Liter
Milk Price (Base Year)-2018 , P_{M-18} = 85 Rs.
Milk Price (Current Year)2020 , P_{M-20} = 97.50 Rs.

Eggs Quantity (base year), Q_E = 3 dozens
Eggs Price (Base Year)- 2018 , P_{E-18} = 83.13 Rs.
Eggs Price (Current Year)-2020 , P_{E-20} = 115.63 Rs.

Tea Quantity (base year) , Q_T = 2 Packets
Tea Price (Base Year)-2018 , P_{T-18} = 205.26 Rs.
Tea Price (Current Year)2020 , P_{T-20} = 242.10 Rs.

$$Laspeyres\ Index = \frac{(P_{M-20} * Q_M) + (P_{E-20} * Q_E) + (P_{T-20} * Q_T)}{(P_{M-18} * Q_M) + (P_{E-18} * Q_E) + (P_{T-18} * Q_T)} \times 100$$

$$Laspeyres\ Index = \frac{(97.50 * 10) + (115.63 * 3) + (242.10 * 2)}{(85 * 10) + (83.13 * 3) + (205.26 * 2)} \times 100$$

$$Laspeyres\ Index = \frac{975 + 346.89 + 484.2}{850 + 249.39 + 410.52} \times 100$$

$$Laspeyres\ Index = \frac{1806.09}{1509.91} \times 100$$

$$Laspeyres\ Index = 1.196 \times 100$$

$$Laspeyres\ Index = 119.$$