(19) $In\ purely\ competitive\ environment,\ \ \frac{dp}{dx} = 0 \Rightarrow MR = p = AR$

(20) $In\ a\ monopolistic\ economy,\ \ \frac{dp}{dx} < 0 \Rightarrow MR < AR$

(5) Index Number

(1) Simple aggregative method:-

$$P_{01} = \frac{\sum P_1}{\sum P_0} \times 100$$

(2) Simple average of price relatives method:-

$$P_{01} = \frac{1}{N}\sum\left(\frac{P_1}{P_0} \times 100\right) = \frac{\sum I}{N}$$

(3) Weighted aggregate method:-

$$P_{01} = \frac{\sum P_1 w}{\sum P_0 w} \times 100$$

(4) Weighted aggregate of price relative method:-

$$P_{01} = \frac{\sum Iw}{\sum w}$$

$where,\ \ I = \frac{P_1}{P_0} \times 100 = Price\ relative$

$w = Weight$

$P_0 = Base\ price$

$P_1 = Current\ price$

$N = Number\ of\ items$

(6) Moving Averages

$If\ x_1, x_2, x_3, \dots\dots, x_n\ is\ given\ annual\ time\ series, then$

(1) 3-yearly moving averages:-

$\frac{x_1 + x_2 + x_3}{3}, \frac{x_2 + x_3 + x_4}{3}, \frac{x_3 + x_4 + x_5}{3}, \dots\dots which\ are\ placed\ against\ years\ 2,3,4, \dots\dots$

$respectively.$

(2) 5- yearly moving averages:-

$\frac{x_1 + x_2 + x_3 + x_4 + x_5}{5}, \frac{x_2 + x_3 + x_4 + x_5 + x_6}{5}, \dots\dots which\ are\ placed\ against\ years\ 3,4, \dots\dots$

$respectively.$

(3) 4- yearly moving averages:-

$\frac{x_1 + x_2 + x_3 + x_4}{4}, \frac{x_2 + x_3 + x_4 + x_5}{4}, \dots\dots which\ are\ placed\ against\ years\ 2.5,3.5 \dots\dots respectively.$