COBB-DOUGLAS PRODUCTION FUNCTION

* The Cobb-Douglas production function is based on the emperical study of the American manufacturing industry made by 'Paul H. Douglas and C.W. Cobb.

* The function says that labour contributes about three-quarters ($3/4$) of increase in manufacturing production and capital the remaining one quarter ($1/4$).

* The Cobb-Douglas production function is expressed by

$$P = bL^{\alpha} c^{1-\alpha}$$

Where,

P = output / production.

b, α = possitive parameters.

L = labour

c = capital.

α = part of labour contributed in production.

$1-\alpha$ = part of capital used in production.

The equation tells that the output directly depends on Labour and capital.

* ASSUMPTIONS OF C.D. PRODUCTION FUNCTION.

(i) There are only two inputs - Labour and capital.

(ii) productivity of labour is given and constant.

(iii) productivity of capital goods is given and constant.

(iv) It is linearly Homogenious production function. If quantity of L and C are increased by 'm' fold. Then the increased input will be

$$p = b L^\alpha c^{1-\alpha}$$

$$= b(mL)^\alpha (mc)^{1-\alpha}$$

$$= m b L^\alpha c^{1-\alpha}$$

$$= m.p.$$

(v) part time or over time is not included in this function.