Regression :-

x on y :- $x_c = a + by$

y on x :- $y_c = a + bx$

Regression Equation of x on y

$$x - \bar{x} = r \frac{\sigma_x}{\sigma_y} (y - \bar{y})$$

y on x :-

$$y - \bar{y} = r \frac{\sigma_y}{\sigma_x} (x - \bar{x})$$

⑧ x and y are random Variable	x is random Variable y is fixed Variable.
⑨ The range of relationship lies between -1 and +1	regression value is an absolutive figure.
⑩ Relationship between two are more Variable.	It is a mathamatical measure showing the strength relationship between Variables.

(11) What are the various methods of regression?

* Graphic methods.
* Algibriz method.

Graphic methods :-

under this method ~~does~~ are plotted on a Graphic Paper respresenting Pair of values of the

$(A \cup B)' = A' \cap B'$

given variable having a leaner relationship. The Indepented variable is taken in x axies and depented variable y axies.

x on y :- $x_c = a + by$

$y_c = a + bx$

Algebric methods :-

regression equation is an algebric method. It's an algebric expresion of regression line.

$x - \bar{x}$ = 4 formula.

Find the regression line by using actural mean.

x	3	5	6	8	9	11
y	2	3	4	6	5	10

x	$x - \bar{x}$	x^2	y	$y - \bar{y}$	y^2	xy
3	-4	16	2	-3	9	12
5	-2	4	3	-2	4	4
6	-1	1	4	-1	1	1
8	+1	1	6	+1	1	1
9	+2	4	5	0	0	0
11	+4	16	10	+5	25	20
42	0	42	30	0	40	38

$N = 6$

$\bar{x} = 7$

$\bar{y} = 5$

$\Sigma x^2 = 42$

$\Sigma y^2 = 40$

$\Sigma xy = 38$

$\Sigma x = \frac{42}{6} = 7$

$$x - \bar{x} = r \frac{\sigma x}{\sigma y} (y - \bar{y})$$

$$r = \frac{\Sigma xy}{\Sigma y^2} = \frac{38}{40} = 0.95$$

$x - 7 = 0.95 (y - 5)$

$x - 7 = 0.95y - 4.75$

$x = 0.95y - 4.75 + 7$

$x = 0.95y + 2.25$