

possibilities of the inheritance of the blood groups in the following starting with 'yes' or 'no' for each :

- (i) They produce children with blood group 'A' only.
- (ii) They produce children some with 'O' blood group and some with 'A' blood group.

Answer : (a) In humans, the ABO blood groups are controlled by a gene called gene 'I'. It has three alleles, namely I^A , I^B and i .

Table showing the Genetic Basis of Blood Groups in Human Population

Genotype of offspring	Blood-types of offspring
$I^A I^A$	A
$I^A I^B$	AB
$I^A i$	A
$I^A I^B$	AB

$I^B I^B$	B
$I^B i$	B
ii	O

(b) Possibility I

$I^A I^A$

	I^A	I^A
i	$I^A i$	$I^A i$
i	$I^A i$	$I^A i$

Yes. 'A' Blood group only

Possibility II

$I^A i$

	I^A	i
i	$I^A i$	ii
i	$I^A i$	ii

Yes. 50% 'A' Blood Group and 50% 'O' Blood Group

