



For repetition of keywords see p 154.

**Task 4. p.157. Mother-foetus incompatibility.**

Mother-foetus incompatibility in blood group antigens could result in foetus damage and/or erythroblastosis foetalis [EF]. The most pronounced damage could be expected for Rh incompatibility, namely for combination Rh<sup>-</sup> mother [*dd*] and Rh<sup>+</sup> foetus [*Dd*].

Which of the bellow listed parental combinations are at risk because of mother-foetus incompatibility in either *C/c E/e* or *D/d* alleles?

Case	Father's Rh genotype	Mother's Rh genotype
I	<i>CDe/cde</i>	<i>cDe/Cde</i>
II	<i>CDe/CDe</i>	<i>Cde/cde</i>
III	<i>cDE/cde</i>	<i>cdE/Cde</i>
IV	<i>cde/cde</i>	<i>CDE/cDe</i>

Risk of incompatibility: I .....%                      II .....%                      III .....%                      IV .....%

a) What is the explanation of this immunogenetic conflict between mother and child and the time course of it?

.....

b) Why is the second pregnancy more dangerous than the first one?

.....

c) Could we prevent this EF reaction?

.....

d) Why foetus damage could be empirically seen in less than 10% of all Rhesus genetic incompatibilities?

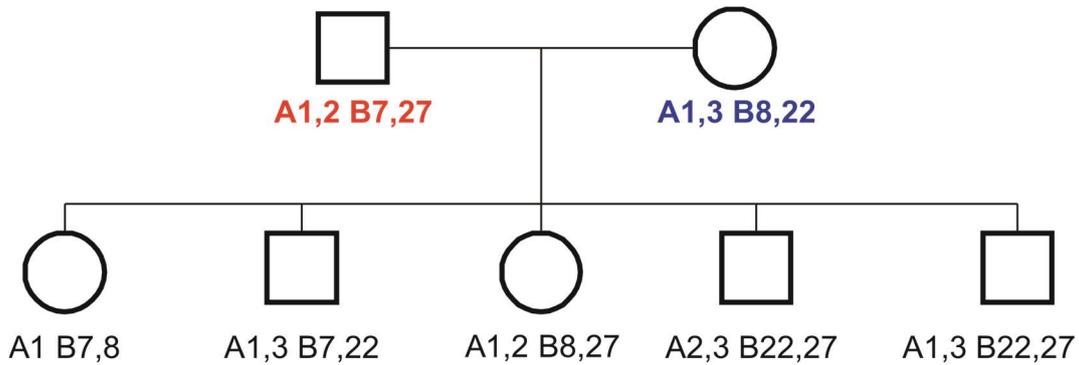
.....





**Task 9. p.159. Inheritance of HLA haplotypes in the family.**

In this two generation pedigree you can see the results of HLA immunophenotyping [A and B loci only] of individual members of the family (Fig. No. 14/2 pg.160).



a) Haplotypes of individual members are

parents: .....

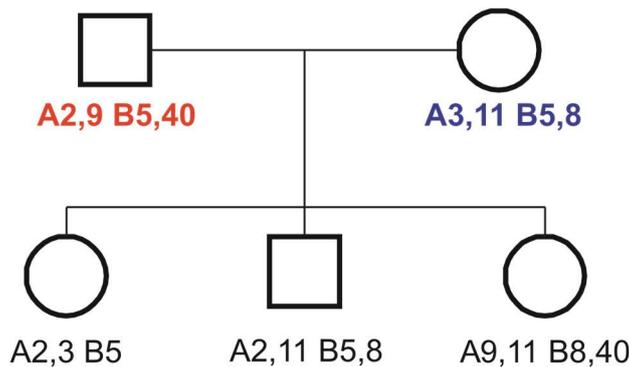
offspring: .....

b) Can you reveal the recombination event within HLA region? Which member carries the HLA recombination?

recombination yes/no                      recombinant haplotype: .....

**Task 10. p.160. HLA haplotypes in the family.**

In this two generation pedigree you can see also the results of HLA immunophenotyping in A and B loci of HLA system (Fig. No. 14/3).



a) Haplotypes of individual family members are:

parents: .....

offspring: .....

b) Theoretically, the boy requires kidney transplantation. Out of his two sisters, who would be the better donor for him?

..... Why? .....



**Task 11.**

In practise, organ grafts from related donors survive better than grafts from unrelated donors, even though both have the same degree of HLA match. Why?

.....

**Task 12. p.161. HLA haplotype sharing.**

Under condition that father and mother of the family differ at all four alleles [in each of two haplotypes] of A and B loci of HLA

- a) How many haplotypes could share parent and child .....
- b) How many antigens could share parent and child? .....
- c) How many haplotypes could share two children in such a family? .....
- d) How many antigens could share two such sibs? .....
- e) How these results would be modified when 1 crossover could occur between A and B loci?  
.....
- f) Define haplotype : .....

