MCQ TEST SERIES

S12-BZ-C4-PRINCIPLES OF INHERITANCE AND VARIATION

4.3 GENETIC CONTROL OF RH FACTOR

1. Rh factor was discovered by:
   A. Mendel and Morgan
   B. Watson and Crick
   C. Karl Landsteiner and Alexander Wiener
   D. Bernstein and Beadle
2. Rh factor is located on the surface of:
   A. Platelets
   B. Leukocytes
   C. Erythrocytes (RBCs)
   D. Plasma proteins
3. Rh factor is primarily associated with the presence of which antigen?
   A. A antigen
   B. B antigen
   C. D antigen
   D. E antigen
4. An individual is Rh positive if:
   A. Only A antigen is present
   B. D antigen is absent
   C. D antigen is present
   D. Both A and B antigens are absent
5. The Rh factor is inherited as a:
   A. Recessive trait
   B. Dominant trait
   C. Sex-linked trait
   D. Codominant trait
6. According to the Fisher and Race hypothesis, Rh factor is controlled by:
   A. A single pair of alleles
   B. Three pairs of closely linked alleles
   C. Codominant alleles
   D. Recessive mutations
7. In Fisher and Race hypothesis, which combination leads to Rh-negative phenotype?
   A. CDE/cDE
   B. CdE/cDe
   C. Cde/cde
   D. cde/cde
8. In Wiener hypothesis, the allele r represents:
   A. Rh-positive
   B. Inactive D antigen
   C. Rh-negative
   D. Rh-neutral
9. According to Wiener, how many alleles exist at the Rh locus?
   A. 2
   B. 3
   C. 5
   D. 8
10. Which of the following genotypes will result in Rh-positive phenotype under the Wiener system?
    A. r/r
    B. R1/r
    C. ry/ry
    D. r1/r1
11. Rh incompatibility can lead to a condition in the newborn called:
    A. Leukopenia
    B. Anaemia major
    C. Erythroblastosis foetalis
    D. Immunodeficiency
12. The first exposure of an Rh-negative mother to Rh-positive blood during childbirth:
    A. Causes immediate haemolysis in the foetus
    B. Leads to antibody production without harm to the first child
    C. Is harmless for future pregnancies
    D. Prevents antibody formation
13. The anti-D antibodies involved in Rh incompatibility are of which type?
    A. IgA
    B. IgE
    C. IgG
    D. IgM
14. To prevent erythroblastosis foetalis, anti-D antibodies are administered:
    A. To the foetus only
    B. Only after the child's birth
    C. At 28th and 34th weeks and after delivery
    D. During every menstrual cycle
15. Passive immunization with anti-D antibodies prevents:
    A. Synthesis of new Rh antigens
    B. Destruction of maternal RBCs
    C. Sensitization of the Rh-negative mother
    D. Development of placenta

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ANSWER KEY

1. C
2. C
3. C
4. C
5. B
6. B
7. D
8. C
9. D
10. B
11. C
12. B
13. C
14. C
15. C

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