

**Avinashilingam Institute for Home Science and Higher Education for Women  
(Deemed to be University) Coimbatore- 641043**

**Master's Degree examination- November 2018**

**SEMESTER -I**

**CLASS: I PG  
MAJOR: Zoology**

**Time : 3 Hrs.  
Max. Marks: 60**

**17MZOCO4 Genetics**

**PART-A**

**10x1/2 = 5**

**Choose the correct answer**

1. The problem due to "Rh" factor arises when the blood of two (Rh<sup>+</sup> and Rh<sup>-</sup>) mix up  
(a) During pregnancy (b) In a test tube (c) Through transfusion (d) Both a & c
2. ABO blood group system is due to  
(a) Multifactor inheritance (b) Incomplete dominance (c) Multiple allelism (d) Epistasis.
3. Number of Barr bodies in XXXX female is.  
(a) 1 (b) 2 (c) 3 (d) 4
4. Which of the following is suitable for experiment on linkage?  
(a) aaBB x aaBB (b) AABB x aabb (c) AaBb x AaBb (d) AAbb x AaBB
5. In human beings 45 chromosomes/ single X/XO abnormality causes  
(a) Down's syndrome (b) Klinefelter's syndrome  
(c) Turner's syndrome (d) Edward's syndrome.
6. Down's syndrome is due to  
(a) crossing over (b) Linkage  
(c) Sex-linked inheritance (d) Nondisjunction of chromosomes.
7. Mental retardation in man, associated with sex chromosomal abnormality is usually due to  
(a) Moderate increase in Y complement (b) Large increase in Y complement  
(c). Reduction in X complement (d) Increase in X complement
8. A woman with two genes for haemophilia and one gene for colour blindness on one of the 'X' chromosomes marries a normal man. How will the progeny be?  
(a) 50% haemophilic colour-blind sons and 50% normal sons  
(b) 50% haemophilic daughters (carrier) and 50% colour blind daughters (carrier)  
(c) All sons and daughters haemophilic and colour-blind  
(d) Haemophilic and colour-blind daughters.
9. Probability of four sons to a couple is  
(a) 1/4 (b) 1/8 (c) 1/16 (d) 1/32
10. Haemophilia is more commonly seen in human males than in human females because  
(a) A greater proportion of girls die in infancy  
(b) This disease is due to a Y-linked recessive mutation  
(c) This disease is due to an X-linked recessive mutation  
(d) This disease is due to an X-linked dominant mutation.

**Part B**

**5 x 4 = 20**

**Answer ALL questions**

**Each answer should not exceed 200 words or one page**

- 11 (a) Express the Characteristics of multiple alleles  
(Or)  
(b) What are Mendelian disorders?. Mention their characteristics
- 12 (a) Illustrate the Morgan's Concept of Linkage  
(Or)  
(b) Describe about epistatic genes
- 13 (a) Describe the Killer Particles in paramecium  
(Or)  
(b) List out he changes in gene frequencies
- 14 (a) List out the genetic testing methods  
(Or)  
(b) Explain the amniocentesis
- 15 (a) Illustrate the F' conjugation  
(Or)  
(b) Elucidate different types of Transposons.

**Part C**

**5 x 7 = 35**

**Answer ALL questions**

**Each answer should not exceed 600 words or three pages**

- 16.(a) Explain the Salient Features of Construction of Linkage Maps of Chromosomes.  
(Or)  
(b) Explain about shell coiling in snails and sigma particles in drosophila
- 17 (a) Review about lethal alleles  
(Or)  
(b) Explain about sex determination in human beings?
- 18.a) Discuss about hfr conjugation.  
(Or)  
(b) Explain about chromosomal aberrations.
- 19 (a) List out the symbols percent in the pedigree chart.  
(Or)  
(b) Describe the various methods of Genetic Counselling.
- 20 (a) Illustrate the animal breeding and importance.  
(Or)  
(b) Distinguish the two type of transduction.

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