



Monthly Examination, First Semester - 2021-2022

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**Q1/ Answer questions in brief.**

**(12 Marks)**

1. How can male drosophila distinguished from female?
2. When do drosophilae have white eyes?
3. Define genetic dominance.
4. Why can you possess traits neither of your parents have?
5. What is hetero-chromatination?
6. In ..... heterozygotes can demonstrate the same phenotype with dominance parent.
7. Drosophila genome contains an X/Y pair with ..... of chromosomes.

**Q2/ Answer these questions.**

**(8 Marks)**

**A/** Why is Drosophila an excellent organism for the study of genetics?

**B/** Polytene chromosomes are observed in Drosophila answer the following questions:

- a) Which cells would you use to extract polytene chromosomes from Drosophila?
- b) How are these chromosomes formed?
- c) What are the other names of polytene?
- d) How many bands are there in polytene? What are they?

**Q3/ Answer these questions about *D. melanogaster*.**

**(10 Marks)**

**A/** What is anesthetizing flies? and How can we transfer flies without Anesthetizing?

**B/** Which of the following would represent "ideal" qualities of a research organism for genetic studies?

- a. Short generation time
- b. Large numbers of offspring per mating
- c. Inexpensive to raise
- d. b and c
- e. a, b and c

**C/ For each of the (genotypes, phenotype) below, determine the (phenotype, Genotype).**

-Black coat is complete dominant to red coat of Cattle

\_\_\_\_\_ BB  
\_\_\_\_\_ Bb  
\_\_\_\_\_ bb

-Red coat is codominant with white coat of Cattle

RR \_\_\_\_\_  
Rr \_\_\_\_\_  
rr \_\_\_\_\_

-Black feather is incomplete to white feather in chicken.

\_\_\_\_\_ Black  
\_\_\_\_\_ Blue  
\_\_\_\_\_ White

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