Please copy the following question and complete answer. Submit by the end of your practical session to your respective class drawer in my cubical as your attendance during practical test week.

CHAPTER 4: GENETIC INHERITANCE

1. In *Drosophila* sp., mutants black body (b) and pupal wing (p) are both recessive alleles. Flies with black bodies and pupal wing phenotypes were crossed with heterozygous flies (grey bodies and long wings).

   i) Show the genetic diagram if the genes for body colour and wing type are on different chromosomes. [4 *marks*]
   ii) Show the genetic diagram if the genes for body colour and wing type are on same chromosome. [4 *marks*]

CHAPTER 5: POPULATION GENETICS

1. In a population of 5000 chickens, there are 950 black chickens. The allele for black feather, B is dominant over white feather, b. Assume the population of chickens are allowed to mate randomly, calculate:
   i) The frequency of the white feather allele. [2 *marks*]
   ii) The frequency of the black feather allele. [1 *mark*]
   iii) The number of heterozygous chickens in the population. [1 *mark*]
   iv) If all the white feather chickens were killed by a disease, calculate the new frequency of dominant and recessive alleles in the new population. [3 *marks*]