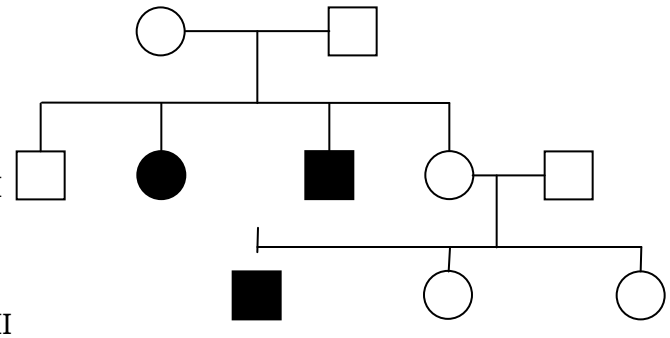
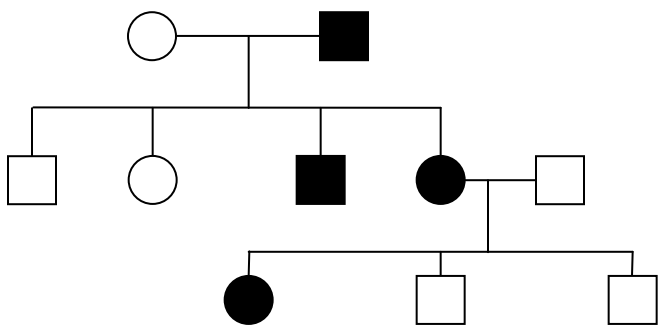
CLASS :12	TOPIC:- PRINCIPLES OF INHERITANCE AND VARIATION	WORK SHEET NO: 5
	ONE MARK QUESTIONS	
1	Name one autosomal dominant and one autosomal recessive Mendelian disorder in humans.	
2	Write the genotype of i) an individual who is carrier of sickle cell anaemia gene but apparently unaffected, and ii) an individual affected with the disease.	
3	Write the percentage of F2 homozygous and heterozygous populations in a typical monohybrid cross.	
	TWO MARKS QUESTIONS	
4	A man with blood group A married a woman with B group. They have a son with AB blood group and a daughter with blood group O. Workout the cross and show the possibility of such inheritance.	
5	The male fruit fly and female fowl are heterogametic while the female fruit fly and male fowl are homogametic. Why are they called so?	
6	A plant of *Antirrhinum majus* with red flowers was crossed with another plant of the same species with white flowers. The plants of the F1 generation bore pink flowers. Explain the pattern of inheritance with the help of a cross.	
7	A woman with blood group 'O' married a man with AB group. Show the possible blood groups of the progeny. List the alleles involved in this inheritance.	
8	How does a test cross help in identifying the genotype of the organism? Explain.	
9	i) Why are grasshopper and Drosophila said to show male heterogamety? Explain. ii) Explain female heterogamety with the help of an example.	

	3 MARK QUESTIONS	
10	Explain the pattern of inheritance of haemophilia in humans. Why is the possibility of a human female becoming haemophilic extremely rare? Explain	
11	Study the pedigree chart and answer the questions that follow. I II III  a) Is the trait recessive or dominant? b) Is the trait sex- linked or autosomal? Give the genotypes of the parents in generation I and of their third and fourth child in generation II	
12	Study the pedigree chart and answer the questions that follow: I II  III a) Is the trait recessive or dominant? b) Is the train sex- linked or autosomal? Give the genotypes of the parents shown in generation I and their third child shown in generation II and the first grand child shown in generation III.	

13	Inhertiance pattern of ABO blood groups in humans shows dominance, codominance and multiple allelism. Explain each concept with the help of blood group genotypes.	
14	Who proposed chromosomal theory of inheritance? Point out any two similarities in the behaviour of chromosomes and genes.	
15	Explain the mechanism of sex determination in insects like Drosophila and grasshopper.	
	5 MARK QUESTIONS	
16	A dihybrid heterozygous round, yellow seeded garden pea (*Pisum sativum*) was crossed with a double recessive plant. (i) What type of cross is this? (ii) Work out the genotype and phenotype of the progeny. (iii) What principle of Mendel is illustrated through the result of this cross	
17	Work out a monohybrid cross up to F2 generation between two pea plants and two Antirrhinum plants both having contrasting traits with respect to colour of flower. Comment on the pattern of inheritance in the crosses carried above.	
	VALUE BASED QUESTION	
18	Anita was happy when she gave birth to her first child. Her in- laws were dissatisfied at her not giving birth to a male child and blamed Anita. Anita tried to convince her in laws that she had no role in the child's gender. They understood the biological reason but were yet to be satisfied. Anita's husband took up the matter and convinced the parents. a) What values did Anita's husband show in the above situation? b) What governs sex determination in humans? How is it different from birds? c) Why can't Anita be blamed for not giving birth to a male child?	