



# ST. LAWRENCE HIGH SCHOOL



## A JESUIT CHRISTIAN MINORITY INSTITUTION

### SOLUTIONS – 18

Class: XII

Sub: Biological Science

Date: 20.06.2020

Topic: Chapter 5 (part 7) Sex linked Inheritance in *Drosophila*

F.M. : 15

Choose the correct option:

(1x15=15)

- The scientist who discovered the phenomenon of sex linkage :-  
a) C B Bridges b) Thomas H Morgan c) H Sturtevant d) None of these  
**Answer : Thomas H Morgan (b)**
- T.H. Morgan conducted experiments on :-  
a) *Drosophila* b) Honey bee c) Pea plant d) All of these  
**Answer : *Drosophila* (a)**
- Morgan had selected fruit flies for cytogenetics studies because :-  
a) They breed within two weeks b) Economical to grow as they could breed on fruits c) Female easily distinguishable from male d) All of these  
**Answer : All of these (d)**
- The fruit fly has \_\_\_\_\_ pairs of chromosomes.  
a) 8 b) 6 c) 4 d) 2  
**Answer : 4 (c)**
- The mutant variety which was obtained by Morgan had :-  
a) White eyes b) Red eyes c) Black eyes d) No eyes  
**Answer : White eyes (a)**
- The first cross made between white eyed male and red eyed female resulted in \_\_\_\_\_ in F<sub>1</sub> generation.  
a) White eyed offsprings b) All red eyed offsprings c) 50 % red eyed and 50% white offsprings d) All of these  
**Answer : All red eyed offsprings (b)**
- For F<sub>2</sub> generation he had crossed heterozygous red eyed female of (F<sub>1</sub> generation) and a white eyed Male. He obtained the following progeny in F<sub>2</sub> :-  
a) All red eyed female and 25% red eyed male and 25 % white eyed male b) All white eyed female and red eyed male c) All white males and no females d) All of these  
**Answer : All red eyed female and 25% red eyed male and 25% white eyed male (a)**

8. In the reciprocal cross the parents were :-  
 a) Red eyed female and white eyed male b) White eyed female and red eyed male c) Both male and female were red eyed d) None of these  
**Answer : White eyed female and red eyed male (b)**
9. In  $F_1$  generation of reciprocal cross the following progeny was obtained :-  
 a) Females were red eyed and males were white eyed b) All were white eyed c) Both sexes were red eyed d) Males were red eyed and females were white  
**Answer : Females were red eyed and males were white eyed (a)**
10. In the reciprocal cross of Morgan the following progeny was obtained in  $F_2$  generation.  
 a) All red eyed b) All white eyed c) 50% were red eyed and 50% progeny was white eyed d) Females had red eyes and male had white  
**Answer : 50% were red eyed and 50% progeny was white eyed (c)**
11. Sex linked genes in *Drosophila* was found on :-  
 a) Autosomes b) X-Chromosomes c) Y-chromosomes d) Both X and Y Chromosomes  
**Answer : X-Chromosomes (b)**
12. X-linked genes in *Drosophila* were transferred from :-  
 a) Mother to son b) Father to son c) Mother to both son and daughter d) All of these  
**Answer : Mother to son (a)**
13. The phenomenon where a male transmits its genes to grandsons ( $F_2$  males) through  $F_1$  females is called :-  
 a) Criss-cross inheritance b) Sex linkage c) Epistasis d) Polygenic Inheritance  
**Answer : Criss-cross inheritance (a)**
14. The gene for eye colour in *Drosophila* was located on :-  
 a) Y-Chromosome b) X-chromosome c) Chromosome 4 d) Chromosome 3  
**Answer : X-chromosome (b)**
15. A male offsprings receives \_\_\_\_\_ from mother and \_\_\_\_\_ from father respectively.  
 a) X-chromosome and Y-Chromosome b) Y-Chromosome and X-chromosome c) 2 X chromosome and no chromosome d) No chromosome and both X and Y  
**Answer : X-chromosome and Y-chromosome (a)**

