

**Zoology [Honours]
[CBCS]**

B.Sc. Fifth Semester End Examination-2023

(Regular & Supplementary Paper)

PAPER-C12P

(Practical)

Full Marks: 20

Time: 02 Hrs

The figures in the right hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

1. Crossing of a purple-eyed straight winged *Drosophila* with a red-eyed curved-winged *Drosophila* produced dihybrid red-eyed straight-winged females in the F1 generation. On crossing such F1 females with double-recessive purple-eyed curved winged males, the F2 generation showed the following phenotype distribution: red straight=339 ; purple straight =612; red curved=725; purple curved=384. Red eyes and straight wings are dominant factor (A and B respectively) While purple eyes and curved wings are recessive factors (a and b respectively)
Find – (I) Whether or not the F2 generation obeys the Mendelian law of independent assortment, and

(2)

(II) Whether or not there is an indication of linkage between the two relevant genes.

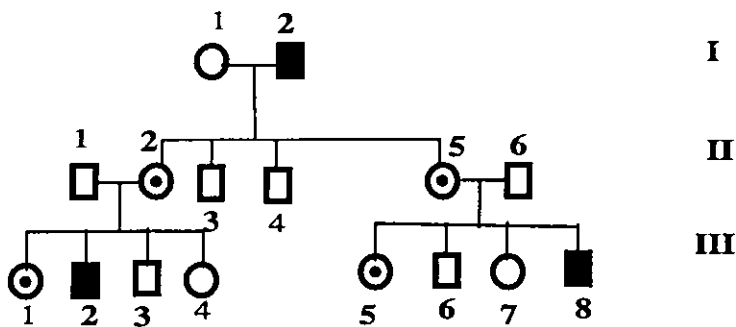
The critical χ^2 values ($\delta f = 3$) are $\chi^2_{0.05}(3)=7.28$, $\chi^2_{0.02}(3)=9.84$, $\chi^2_{0.01}(3)=11.34$, $\chi^2_{0.001}(3)=16.27$. 5

2. In E.coli four Hfr strain donate the following genetic markers shown in the order donated: 5

Strain 1:	M	Z	X	W	C
Strain 2:	L	A	N	C	W
Strain 3:	A	L	B	R	U
Strain 4:	Z	M	U	R	B

All these Hfr strains are derived from the same F⁺ strain. What is the order of these markers on the circular chromosome of the original F⁺?

3. Write the description, analysis, genotype and conclusion of the following pedigree scheme. 5



4. Laboratory Note-book. 2
5. Viva-voce 3