

RAGHUNATHPUR COLLEGE
Department of Zoology
 UG Sem I examination
 Course Title: **Non-chordates and Cytogenetics**
 Course Code: **BZOOMAJ01C**

TIME: 3Hours

F.M 60

- A) Answer any ten questions from the following: 2x10=20
1. How gynanders in *Drosophila* are formed?
 2. What are lethal alleles?
 3. Differentiate prosopyles and apopyles.
 4. Is this any link present between Barr body and Dosage compensation in human?
 5. What do you mean by Holopneustic insect?
 6. What is polygenic inheritance? Give an example.
 7. What are *sxl*, *dsx* and *tra* genes?
 8. What are colloblasts and what is their function?
 9. Differentiate between polyp and medusa forms in Cnidaria.
 10. What is chaistoneury?
 11. Write two general characteristics of Mollusca with two example?
 12. What is an octamere?
 13. Write down the karyotype of Klienfilter syndrome?
 14. Differentiate between metagenesis and alternation of generations.
 15. What is the significance of the stomochord in Hemichordates? Name the larval form of Hemichordates.

- B) Answer any six questions from the following: 5x6= 30
1. What is genic balance theory? Explain the sex determination in *Drosophila* with the help of this theory.(1+4)
 2. Describe the molecular mechanism of human sex determination.
 3. What is holometabolus insect ? Write a note on the hormonal regulation of holometabolous metamorphosis.
 4. Discuss epistasis and explain its types with an example.
 5. Write down the phenomenons before & after torsion in *Pila* sp.
 6. Write a short note on echinoderms larva.
 7. Describe the prophase 1 phase of Meiosis cell division with suitable diagram
 8. Write down the structure of nucleosome packaging with suitable diagram.
 9. State the difference:- i. Prokaryotic cell/Eukaryotic cell ii.Euchromatin/Heterochromatin.

- C) Answer any One questions from the following: 1x10=10

1. In a three-point test cross $ABC/abc \times abc/abc$ following data are obtained:

ABC	abc	aBc	AbC	ABc	abC	aBC	Abc	Total
130	240	96	104	138	142	12	8	970

Find out the correct linear order of the genes. Calculate the map distance and interference. (5 +5 =10)

2. Describe the structure of water vascular system in Star fishes with diagram. How the tube feet help in locomotion? (7+3=10)
3. Draw & Descrite the Nuclear pore complex. (2+8)