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Zoology (Hons.) Paper-III

Answer five questions, selecting at least two from each Group.

Group-A

1. Give an account of the molecular organization of Plasma membrane
Or, Describe the transport of substances across cell-membrane through various carriers. LNMUonline.com
2. Enumerate the molecular structure of Mitochondria.
3. Describe the structure and functions of 70S ribosomes.
4. Describe the process of nucleation and elongation of action filaments. Discuss how different actin cross-linking proteins form either bundles or network of actin filaments.

Group-B

5. Discuss the modifications in dihybrid ratio (9 : 3 : 3 : 1) due to different kinds of interaction of genes and explain these modifications on the basis of Mendel's laws of inheritance.
6. Describe the mechanism of sex-determination in Drosophila and Man.
Or, Compare and contrast the chromosome theory and genic balance theory of sex-determination. Explain the experiments which indicated a balance between sex-chromosomes and autosomes in Drosophila.
7. Give an account of non-chromosomal inheritance by cell-organelles and endosymbionts.
8. Write short notes on any two of the following : LNMUonline.com
(a) Law of Purity of gametes (b) Complementary genes (c) Colourblindness and mode of its inheritance (d) Klinefelter's Syndrome (e) Trisomy