

Roll No. ....

Total No. of Questions : 9]  
(2034)

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## UG (CBCS) IInd Year Annual Examination

# 2815

### B.Sc. ZOOLOGY

(Genetics and Evolutionary Biology)

(DSC-ID)

Paper : ZOOL 202 TH

**Time : 3 Hours]**

**[Maximum Marks : 50**

**Note** :- Attempt *five* questions in all. Attempt *one* question each from Sections-B, C, D and E. Question No. 1 (Section-A) is compulsory.

#### Section-A

#### (Compulsory Question)

1. (A) Do as required :

- (i) Sutton and Boveri proposed the famous theory .....
- (ii) Determination of a trait by more than two alleles is called .....

- (iii) Codominance is ..... interaction, while epistasis is .....
- (iv) Crossing over occurs between ..... chromosomes.
- (v) The sex chromosomes of domestic chicken are :
- (a) ZO-ZZ
  - (b) ZW-ZZ
  - (c) XX
  - (d) XY
- (vi) ..... is called blue print molecule.
- (vii) Phenomenon of industrial melanism shows :
- (a) Artificial selection
  - (b) Natural selection
  - (c) Geographic isolation
  - (d) Reproductive isolation
- (viii) The gas mixture used by Miller in his experiment was .....
- (ix) What do you mean by Palaeontology ?
- (x) What is Central Dogma ?

10×1=10



(B) Write short notes on the following :

- (i) Synaptonemal complex
- (ii) Lethal genes
- (iii) Dosage compensation
- (iv) Biological species concept

4×2=8

### Section-B

2. (a) What is Epistasis ? Explain recessive and dominant epistasis taking suitable examples.
- (b) Explain the structure of B-DNA. 5,3
3. (a) What is Codominance ? Explain with examples.
- (b) Discuss Mendel's laws of heredity. 5,3

### Section-C

4. (a) Differentiate between complete and incomplete linkage.
- (b) What is Inversion ? Discuss its types and importance. 5,3
5. (a) Give detailed account of Gene Mutation.
- (b) Discuss Environmental role in determination of Sex. 5,3

## Section-D

6. (a) Briefly describe Lamarckism. How has it been modified in Neo-Lamarckism ?
- (b) Describe the various sources of variation. 5,3
7. (a) Explain the horse evolution with suitable diagrams.
- (b) Explain various types of premating isolation mechanism. 5,3

## Section-E

8. Write short notes on the following :
- (i) Industrial melanism
  - (ii) Coacervates
  - (iii) Macroevolution
  - (iv) Frame shift mutation 2×4=8
9. (a) What is Speciation ? Enumerate various modes of Speciation.
- (b) Explain the role of extinction in evolution. 5,3