

**SEM-2369****M. Sc. (Second Semester) Examination, June 2023****ZOOLOGY****Paper : Fourth****(Molecular Cell Biology and Genetics)****Time Allowed : Three hours****Maximum Marks : 35****Minimum Pass Marks : 12**

**नोट :** सभी तीनों खण्डों के प्रश्न निर्देशानुसार करें। अंकों का विभाजन खण्डों के साथ दिया जा रहा है।

**Note :** Attempt questions of all three sections as directed. Distribution of marks is given with sections.

**Section-‘A’****(Objective Type Questions) 5×1=5**

**Note :** Answer all the following questions. Each question carries 1 mark.

**1. Choose the correct answer :**

- (i) A gene showing codominance :
- Has one allele dominant to the other
  - Has both alleles independently expressed in the heterozygote
  - Has alleles tightly linked on the same chromosome
  - Has alleles expressed at the same time in development
- (ii) In dna (DNA) adenine normally pulse with
- Guanine
  - Cytosine
  - Thymine
  - Uracil
- (iii) When a single gene influences more than one trait it is called :
- Epistasis
  - Pleiotropy
  - Pseudo dominance

- (d) None of these
- (iv) Simple were reflexes use signaling molecules called :
- (a) Nitric oxide
- (b) Neurotransmitters
- (c) G. Protein
- (d) Proteases
- (v) With of the following comes under the category of all surface Receptor :
- (a) Enzyme linked Receptor
- (b) Ion-channel linked Receptor
- (c) G-Protein linked Receptor
- (d) All of the above

## Section-'B'

(Short Answer Type Questions) 5×2=10

*Note : Attempt all the five questions as directed.  
Each question carries 2 marks.*

## Unit-I

2. Functional consequences.

Or

Microfilaments.

## Unit-II

3. Entegenius

Or

Cell surface Receptors.

## Unit-III

4. Chromosomal organization.

Or

Gao junctions and connexines.

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Unit-IV

5. Human chromosome

Or

Basic concept of dosage compensation.

Unit-V

6. Human Gene therapy

Or

Genetic screening

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खण्ड-'स'

Section-'C'

( दीर्घ उत्तरीय प्रश्न )

2×10=20

(Long Answer Type Questions)

*नोट : निम्नलिखित में से किन्हीं दो प्रश्नों के उत्तर दीजिए।  
प्रत्येक प्रश्न 10 अंकों का है।*

*Note : Attempt any two questions of the following.  
Each question carries 10 marks.*

7. सूक्ष्म तन्तु की संरचना तथा कार्य का वर्णन कीजिए।  
Describe the structure and function of Micro filaments.
8. प्लाज्मा मेम्ब्रेन से केन्द्रक की ओर सिगनल भेजने की क्रिया पर निबंध लिखें।  
Write an essay on signaling from plasma membrane to nucleus.
9. कोशिकाओं के संगठन में पदानुक्रम का वर्णन करें।  
Give and account hierarchy in organization of cell.
10. सायटोजिनेटिक मानव गुणसूत्र का वर्णन कीजिए।

Describe the concept of cytogenetic of human chromosomes.

11. जीन पुस्तकालय पर एक निबंध लिखिए।

Write an essay on gene libraries