



WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 5th Semester Examination, 2024-25

ZOOACOR12T-ZOOLOGY (CC12)



Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.
All symbols are of usual significance.*

1. Answer any **eight** questions from the following:

2×8 = 16

- What are SINEs and LINEs?
- What are jumping genes?
- What do you mean by Edwards Syndrome?
- What is Pleiotropy?
- What is Bombay phenotype?
- What is the relation of MSL complex and histone acetyltransferase (HAT)?
- What do you mean by frameshift mutation?
- What is Klinefelter's syndrome?
- What is test cross? Why is it done?
- What is Kappa particle?
- What is Hfr?
- Define epistasis with example.

2. Answer any **three** questions from the following:

3×3 = 9

- Explain Lyon's hypothesis. How many Barr body would you find in the nuclei of person with the following sex chromosomes?
(i) XO, (ii) XXY, (iii) XXXX
- State the role of transition mutation in HbC development. State the role of T-form of haemoglobin in sickle cell anaemia.
- Mention the differences between crossing over and translocation.
- Describe briefly the structure of an insertion sequence with a diagram.
- Mention briefly the criteria for extrachromosomal inheritance.

$1\frac{1}{2} + 1\frac{1}{2}$

1+2

3. Answer any **three** questions from the following:

5×3 = 15

- Describe briefly the molecular mechanism of sex determination in humans.

- (b) A male drosophila having cut wings (t), vermillion eyes (v) and yellow body (y) is crossed with a female heterozygous with respect to these three characters. The following classes of phenotypes are observed in the offspring.

yellow body → 440

yellow body, vermillion eyes → 50

wild type → 1780

vermillion eyes, cut wings → 470

vermillion eyes → 300

yellow body, vermillion eyes, cut wings → 1710

yellow body, cut wings → 270

cut wings → 55

Construct the genetic map of the three loci involved indicating both distance and correct gene order.

- (c) State the various types of hemophilia found in man. State the cause of congenital rcb/green color blindness. 3+2
- (d) Write differences between generalized and specialized transduction in bacteria with suitable diagram. What does Cri du chat cry sound like? 4+1
- (e) Write briefly on any *two* of the following: $2\frac{1}{2} + 2\frac{1}{2}$
- (i) Polygenic inheritance
 - (ii) Shell coiling in snail
 - (iii) Down's Syndrome
 - (iv) Sickle Cell Anaemia.

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