বিদ্যাসাগর বিশ্ববিদ্যালয়
VIDYASAGAR UNIVERSITY

Question Paper

B.Sc. Honours Examinations 2021
(Under CBCS Pattern)
Semester - V
Subject: ZOOLOGY
Paper : C 12-T & P
Genetics

Full Marks : 60 (Theory-40 + Practical-20)
Time : 3 Hours

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.

[Theory]

Group-A

A. Answer any **three** questions from the following : 12×3=36

1. Write the different types of chromosomal aberrations with suitable example. What is incomplete dominance and co-dominance? What is pleiotropy effect with suitable example? What is epistasis? 4+3+3+2

2. What are the molecular mechanisms of mutation in relation to chemical mutagen? Write the short note on : Frame shift mutation. What is turner syndrome and klinefilter syndrome? What are the relations of linkage and crossing over?

4+3+3+2

3. What is the significance of transposons? What is hybrid dysgenesis? Write the short note on : LINE & SINE? What are the differences between AC and DS elements in Maize? What are basic differences between DNA transposons and retrotransposons? 2+2+4+2+2

4. Why is dosage compensation necessary? How is the sex determined in a mammal, Discuss it with one example? 4+8

5. What do you mean by cytoplasmic inheritance or non-mendelian inheritance? What is nondisjunction of chromosome? Discuss the event with trisomy 21. 2+4+6

6. Write note on : 6+6

   (a) What are examples of recessive epistasis?

   (b) What is pleiotropy?

Group-B

B. Answer any **two** questions from the following : 2×2=4

1. Which is the sex determining gene in humans?

2. What is point mutation

3. Example of sex-influenced inheritance

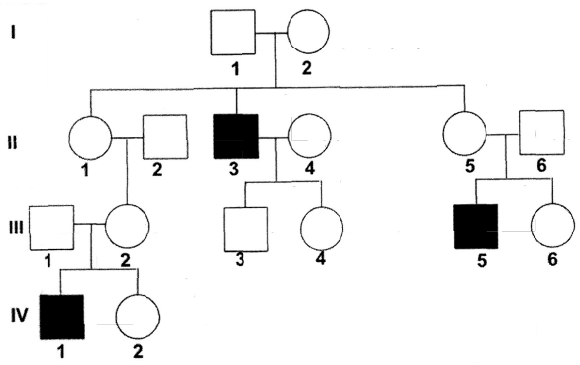
4. What is chemical mutagen

[Practical]

Group - A

A. Answer any **one** question from the following : 15×1=15

1. Discuss the mode of inheritance pattern with reasons. 15



2. Shell color black is controlled by dominant allele. Its recessive allele is yellow shell color.

YY	Yy	yy
35	30	25

Analyse the data with Chi square analysis.

3. AB = 380

ab = 420

Ab = 125

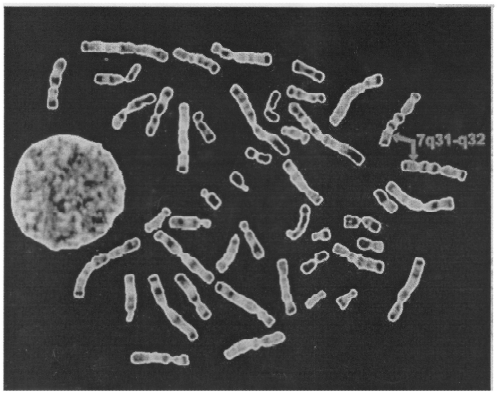
aB = 75

Calculate the map distance between A and B gene.

Group - B

B. Answer any **one** question from the following : 5×1=5

1. Discuss the event from the photomicrograph of human chromosomes. 5



2. Discuss the phenomenon of complete linkage in Drosophila with suitable example. 5

3. Write about the importance submission of Laboratory Note Book and Viva voce in Genetics. 2+3