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UG/5th Sem/Zoo(H)/T/19

2019

B.Sc. (Honours)

5th Semester Examination

ZOOLOGY

Paper - C12T

[Genetics]



Full Marks : 40

Time : 2 Hours

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

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

5×2=10

(a) What is XIST ?

(b) What is thymine dimer ? How is it formed ?

1+1

(c) What would be the sex of man and *Drosophila* having 2A+XXY karyotype.

1+1

(d) What are retrotransposons. Give examples.

[ Turn Over ]

( 2 )

- (e) What do you mean by chromosomal non disjunction ? What disease is caused by Trisomy-18 ?
- (f) What are the differences between LINEs and SINEs ?
- (g) Differentiate between F' and F<sup>+</sup>.
- (h) Write a short account on pleiotropy.

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

4×5=20

- (a) What do you mean by 'Dosage compensation' ? Discuss the mechanism of Dosage compensation in *Drosophila* sp. 2+3
- (b) What genetic defect results in the disorder Xeroderma Pigmentosum (XP) in human ? Why are X-rays a more potent mutagen than UV-radiation ? What is trisomy ? 2+2+1
- (c) "Sickle cell anemia is an ideal example of transversion type of mutation" — comment with justification.
- (d) (i) "Sex limited trait is a form of sex influence trait". Explain.

( 3 )

(ii) Differentiate between co-dominance and incomplete dominance. 2+3

- (e) How does specialized transduction differ from generalized transduction ? What is the role of F factor in conjugation ? 3+2
- (f) What do you mean by complete and incomplete linkage ? State the criteria for inheritance of X-linked recessive traits and Y linked genes. Give examples. 2+2+1

3. Answer any *one* question of the following :

1×10=10

- (a) State the molecular mechanism with special emphasis to alternative splicing in sex determination of *Drosophila* species. 10
- (b) (a) What is conditional lethal ?
- (b) Discuss the roles of different proteins and enzymes in recombination of *E.coli*.
- (c) Discuss how T9 element gain entry and exit from chromosome. 2+4+4