B.Sc. RNLK-/Zoology/C12T/21

2022

Zoology

[Fifth Semester]

Paper - C12T (Genetics)

Full Marks : 40

Time : 2 hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

1. Answer any five from the followings : 2×5

a) What is epistasis? Write its significance in inheritance.

b) Distinguish between sex-influence and sex-limited inheritance.

c) What do you mean by Lethal gene. Write its significance in inheritance.

d) Define linkage with a suitable example.

e) Write the name of two theory of molecular basis of crossing over.

f) Write the formula for calculation of expected D.C.O frequency.

g) Name different types of gene mutation.

h) Define transduction with an example.

2. Answer any four for the followings. 4×5=20

a) Write down the principles of inheritance. Define complete dominance with an example.

b) What do you mean by chromosomal aberration? What is inversion? 2+3

c) Describe the process of conjugation in bacteria with suitable diagram. 3+2

d) Briefly describe the role of different genes involved in human sex determination. 2+3

e) What is non-disjuction? State the effects of Huntington disease. 3+2

f) Write a short note on 'molicular basis of mutation. 5

3. Answer any one of the following questions : 1×10=10

a) Write down the mechanisms of sex determination of *Drosophila*. 10

b) In three point test cross [ABC/abc ×abc/abc]

Only phenetypes are given. 10

1) ABC - 230
2) abc - 240
3) aBC - 96
4) Abc - 104
5) ABc - 138
6) abC - 142
7) AbC - 12
8) aBc - 08

Find out the correct linear order of recombination distance of genes. Calculate co-efficient of coincidance.