UNIVERSITY OF NORTH BENGAL

B.Sc. Honours 3rd Semester Examination, 2021

CC7-BOTANY

GENETICS

Time Allotted: 2 Hours   Full Marks: 40

The figures in the margin indicate full marks.

GROUP-A

1. Answer any *five* questions from the following: 1×5 = 5

   (a) What do you mean by pseudogene?

   (b) What is sex limited trait?

   (c) What is meant by recombination frequency?

   (d) Explain trisomy and nullisomy.

   (e) What is linkage group?

   (f) Give an example of amphidiploid plant.

   (g) Explain recessive lethal gene.

   (h) What is promiscous DNA?

GROUP-B

2. Answer any *three* questions from the following: 5×3 = 15

   (a) Discuss the cytological basis of crossing over.   5

   (b) What is transposon? Explain the role of transposon in mutation.   1+4

   (c) Write a short note on polygenic inheritance.   5

   (d) In a family, if there are four children in a particular generation, then what is the probability that all will be girls? In Mendel's monohybrid cross, calculate the probability of heterozygous among dominant progeny in F_2 generation.   2+3

   (e) Write short notes on: $2\frac{1}{2} + 2\frac{1}{2}$

   (i) Kappa particle

   (ii) CLB method of detection of mutation.

GROUP-C

3.   Answer any *two* questions from the following: 10×2 = 20

   (a) Define Hardy-Weinberg Law. Mathematically establish the law.   2+8

   (b) How does shell coiling in snail show maternal inheritance?   10

   (c) What is translocation heterozygote? Discuss the meiotic behaviour of   2+8
   translocation heterozygote.

   (d) Describe the Benzor's experiment to demonstrate the fine structure of gene.   10

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