

This question paper contains 2 printed pages.

7212

Your Roll No.

M.Sc. / I

J

ENVIRONMENTAL BIOLOGY— Paper II

(Cell Biology and Genetics)

Time : 3 hours

Maximum Marks . 45

(Write your Roll No on the top immediately on receipt of this question paper)

Attempt any five questions.

All questions carry equal marks.

- Q. 1. What are safe havens? How are transposable elements able to spread to new sites in small genomes (e.g. yeast) with few safe havens? **(9)**
- Q. 2. A deviation from Hardy-Weinberg Law is a good starting point for studying evolution of genes in populations. Justify. **(9)**
- Q. 3. Write brief note on any **three** of the following : **(3x3= 9)**
- (i) Split genes
 - (ii) Shine-Dalgarno sequence
 - (iii) Rho protein
 - (iv) Sigma factor
- Q. 4. What is hybrid dysgenesis? Discuss the molecular events underlying hybrid dysgenesis **(9)**
- Q. 5. Differentiate any **three** of the following: **(3x3= 9)**
- (i) Splicing and RNA editing
 - (ii) Ribosome and ribozyme
 - (iii) RNA polymerase and DNA polymerase
 - (iv) Prokaryotic and eukaryotic promoter

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- Q. 6. List the reasons why eugenics programs designed to eliminate deleterious recessive alleles from human populations do not work. (9)**
- Q. 7. What is population bottleneck? How has it affected human evolution? (9)**