



বিদ্যাসাগর বিশ্ববিদ্যালয়

VIDYASAGAR UNIVERSITY

**B.Sc. (Honours) in AGRICULTURE
2nd Semester Examination 2022**

PAPER—AGS-201

FUNDAMENTALS OF GENETICS

Full Marks : 50

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

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

Illustrate the answers wherever necessary.

1. Answer any *ten* questions. 10×2
- (a) What is Split gene ?
- (b) What do you mean by cytoplasmic inheritance ?
- (c) Write down the name of two chemical mutagens ?
- (d) Define TATABOX and mention its importance.
- (e) Write down the definition of linkage ?

- (f) Write a short note on sex influenced traits ?
- (g) Write down the Mendel's first law of inheritance ?
- (h) Define Kornberg enzyme.
- (i) What is co-dominance ?
- (j) Why DNA replication is called semi-conservative type of replication ?
- (k) What is polygene ?
- (l) Write down the name of two diseases caused by gene disfunctioning ?
- (m) Briefly describe splicing.
- (n) Write down the function of two enzymes required for replication.
- (o) Define cell cycle and mention its importance. 1+1

2. Answer any six questions. 6×5

- (a) Give a short note on lac operon.
- (b) Briefly discuss about the process of duplicate gene interaction (9:6:1) ?
- (c) Write down the sex determination process in human ?
- (d) What is incomplete dominance ? What is pleiotropism ? 3+2
- (e) Write a short note on non-sense and missense mutation ? 2+3
- (f) What is cytoplasmic inheritance ? Give example. 2+3

(g) Write a note on

(i) okazaki fragment.

(ii) SSB protein.

3+2

(h) Briefly discuss about the post-transcriptional changes of mRNA ?

(i) Schematically represents the Mendel's dihybride crosson *Pisum sativum* ?

(j) Mention the Roh dependent and Roh independent termination.

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