

2022

B.Sc. (Honours) in AGRICULTURE

2nd Semester Examination

PAPER—AGS-201

(Practical)

FUNDAMENTALS OF GENETICS.

Full Marks : 20

Time : 1 Hour

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.

1. Answer any one question : 1×5

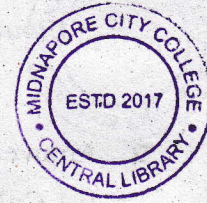
(a) Identify the different stages of cell division of following sample (A/B).

[Draw-2, Label-1, Identifying Character-2]

(b) Identify the following plant tissue sample.

[Draw-2, Label-1, Identifying Character-2]

(Turn Over)



(c) In an experiment in F₂ generation the phenotypic ration of offspring is 1:1:1:1. Calculate the parental genotype.

Round Yellow : Wrinkled Yellow : Round Green : Wrinkled Green = 1 : 1 : 1 : 1

2. Answer any one question : 1x10

(a) Calculate the goodness of fit of supplied seed sample through chi-square method. Determine the gene interaction pattern. (Sample C/D/E) 8+2

(b) A cross is made between homozygous wild-type female Drosophila (a+a+b+b+c+c+) and triple-mutant males (aa bb cc) (the order here is arbitrary). The F₁(a+a b+b c+c) females are test crossed back to the triple-mutant males and the F₂ phenotypic ratios are as follow :

"a+ bc"	18
"ab+ c"	112
"abc"	308
"a+ b+ c"	66



"abc"	59
"a- b- c"	321
"a- b c"	102
"a b- c"	15
	<u>1000</u>



(i) Determine the relative order of loci, and (ii) the map distances between loci.

- 3. Laboratory Note Book. 2
- 4. Viva-Voce. 3