

2023

AGS 3rd Semester Examination

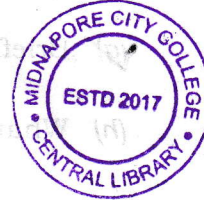
B.Sc. Hons. in Agriculture

Fundamentals of Plant Breeding

PAPER — AGS-302

Full Marks : 50

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.

Answer from **all** the Groups as directed.

GROUP—A

1. Answer **any five** questions from the following :

2×5=10

✓(a) Define protandry and protogyny.

✓(b) Explain about primary and secondary gene pool.

/845

(Turn Over)

(2)

- (c) What do you mean by somaclonal variation?
- Describe about 'Fairchild Mule'.
- What is synthetic variety?
- Differentiate between heterosis and luxuriance.
- Briefly explain Hardy-Weinberg law.
- What is acclimatization?

GROUP—B

2. Answer **any four** questions from the following :
5×4=20

- Mention different breeding methods of self-pollinated crops. Differentiate between synthetic and composite variety. 2+3=5
- Explain megasporogenesis and megagametogenesis. Calculate the total number of meiosis and mitosis to produce 20 seeds. 2+3=5
- Briefly explain about convergent improvement. 5

/845 (Continued)



(3)

- Differentiate between vertical resistance and horizontal resistance. What is vertifolia effect? 3+2=5

What is self-incompatibility? Briefly explain sporophytic self-incompatibility. 2+3=5

Briefly explain about micropropagation technique. 2+3=5

GROUP—C

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

- Explain heterosis based on the following : 5+5=10
- (i) Allelic and non-allelic interactions
- (ii) Genetic diversity

What is hybridization? Explain different steps of hybridization briefly. 1+9=10

Narrate briefly about the cytoplasmic male sterility. Give its merits and demerits. 5+5=10

/845 (Turn Over)

(4)

✓ (d) What is back cross? Explain the method of dominant gene transfer through back cross breeding with suitable diagram. 1+9=10



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

(a) Explain in four lines on the following :
5+5=10

(b) Give a brief account of the following :
5+5=10

(c) What is hybrid vigor? Explain briefly.
1+9=10

✓ (d) Write briefly about the cytoplasmic male sterility. Give its merits and demerits.
5+5=10