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.

(c) What do you mean by somaclonal variation?

(d) Describe about 'Fairchild Mule'.

(e) What is synthetic variety?

(f) Differentiate between heterosis and luxuriance.

(g) Briefly explain Hardy-Weinberg law.

(h) What is acclimatization?

GROUP—B

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

(a) Mention different breeding methods of self-pollinated crops. Differentiate between synthetic and composite variety. 2+3=5

(b) Explain megasporogenesis and mega-gametogenesis. Calculate the total number of meiosis and mitosis to produce 20 seeds. 2+3=5

(c) Briefly explain about convergent improvement. 5

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

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

(f) Briefly explain about micropropagation technique. 2+3=5

GROUP—C

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

(a) Explain heterosis based on the following : 5+5=10

(i) Allelic and non-allelic interactions

(ii) Genetic diversity

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

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

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

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