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6 SEM TDC DSE BOT (CBCS) 1 (H)

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(May/June)

BOTANY

(Discipline Specific Elective)

(For Honours)

Paper : DSE-1

(**Plant Breeding**)

Full Marks : 53

Pass Marks : 21

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

1. (a) Choose the correct answer of the following : 1×3=3

(i) The oldest method of plant breeding is

(1) introduction

(2) selection

(2)

- (3) hybridization
- (4) mutation breeding

(ii) The method of selection in plants showing vegetative propagation is

- (1) pedigree method
- (2) pure-line selection
- (3) mass selection
- (4) clonal selection

(iii) Emasculation is achieved by

- (1) removal of stigma
- (2) removal of anther
- (3) removal of calyx
- (4) removal of corolla

(b) Fill in the blanks : $1 \times 2 = 2$

- (i) N. I. Vavilov conceived the idea of ____ .
- (ii) Superiority of F_1 hybrids over its parents is called ____ .

(3)

2. Write short notes on the following (any three) : $4 \times 3 = 12$

- (a) Objectives of plant breeding
- (b) Plant introduction
- (c) Plant genetic resources
- (d) Clonal selection
- (e) Mutation breeding

3. Write explanatory notes on any two of the following : $6 \times 2 = 12$

- (a) Pedigree method of breeding
- (b) Mode of reproduction in crop plants
- (c) Kernal colour in wheat
- (d) Merits and demerits of mass selection

4. What is backcross method? Write its procedure, merits and demerits. $2 + 6 + 2 + 2 = 12$

Or

Define pure-line selection. Write briefly the selection procedure of pure line. Mention its merits and demerits. $1 + 7 + 2 + 2 = 12$

(4)

5. Define heterosis. Write its characteristics.
Explain the genetic basis of hybrid vigour.

2+4+6=12

Or

Write notes on the following :

4×3=12

- (a) Polyploidy in plant breeding
- (b) Inbreeding depression
- (c) Biotechnology in crop improvement
