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

2024

(May)

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. Choose the correct answer of the following :

1×3=3

(a) Plant breeding is a technique of improving

(i) fodder crops

(ii) agricultural crops

(iii) fruit varieties

(iv) All of the above

(2)

(b) What is the main cause of hybrid vigour?

(i) Homozygosity

(ii) Germination

(iii) Heterozygosity

(iv) Mitosis

(c) What was the ratio of F₂-generation when red and white kernelled variety of wheat were crossed?

(i) 3 : 1

(ii) 1 : 2 : 1

(iii) 1 : 4 : 6 : 4 : 1

(iv) 9 : 3 : 3 : 1

2. Fill in the blanks :

1×2=2

(a) The father of Green Revolution in India is _____.

(b) The hybridization process performed between more than two plants is known as _____.

3. Write short notes on any three of the following :

4×3=12

(a) Centres of origin of crop plants

(b) Apomixis

(3)

(c) Male sterility

(d) Plant genetic resources

(e) Domestication

4. Write explanatory notes on any two of the following :

6×2=12

(a) Major achievement of plant breeding in India

(b) Role of biotechnology in crop improvement

(c) Merits and demerits of plant introduction

(d) Acclimatization

5. Define inbreeding depression. What are the main features of inbreeding depression? Describe briefly the degree of inbreeding depression encountered in various crop species.

2+4+6=12

Or

Define mass selection. Describe the procedure of mass selection and discuss its merits and demerits.

2+6+4=12

6. What is quantitative inheritance? Explain the mechanism of quantitative inheritance with the help of inheritance of kernel colour in wheat.

2+10=12

Or

Write notes on the following :

4×3=12

- (a) Distant hybridization
- (b) Polyploidy in plant breeding
- (c) Role of transgenic plant in crop improvement
