

Total No. of Printed Pages—3

**3 SEM TDC BOTH (CBCS) C 7**

**2 0 2 2**

( Nov/Dec )

**BOTANY**

( Core )

Paper : C-7

( **Genetics** )

Full Marks : 53

Pass Marks : 21

Time : 3 hours

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

1. (a) Choose the <sup>1<sup>st</sup></sup> correct answer of the following : 1×3=3
- (i) The F<sub>2</sub> ratio in duplicate epistasis is 15:1/3:1/9:7/9:3:4.
  - (ii) Heterochromatin is the darkly stained part of cytoplasm/grana/nucleus/chromatin.
  - (iii) The phenotypic dihybrid ratio is 1:1:1:1/9:3:3:1/9:7/9:3:4.

P23/258

( Turn Over )

( 2 )

(b) Fill in the blanks :

1×2=2

(i) Point mutation involves changes in \_\_\_\_\_ base pair.

(ii) \_\_\_\_\_ is the key to speciation of populations.

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

4×3=12

(a) Pleiotropy

(b) Deletion

(c) Turner Syndrome

(d) Genetic Drift

3. What is sex-linked inheritance? Why is it also known as criss-cross pattern of inheritance? Describe it with suitable example.

2+2+8=12

Or

Write short notes on the following :

6+6=12

(a) Polygenic Inheritance

(b) Role of natural selection in speciation

( 3 )

4. Write the difference between the following :

3×4=12

- (a) Euploidy and Aneuploidy
- (b) Incomplete dominance and Codominance
- (c) Pericentric Inversion and Paracentric Inversion
- (d) Mendelian Inheritance and Extrachromosomal Inheritance

Or

What is crossing over? Describe the different types of crossing over. Write the significance of crossing over.

2+8+2=12

5. What do you mean by mutation? Write the characteristic features of mutation. How does the base analogue cause mutations? How are base analog mutations repaired? 2+2+4+4=12

Or

What do you mean by Hardy-Weinberg law? What are the assumptions of Hardy-Weinberg equilibrium? Write the application of Hardy-Weinberg law. 2+4+6=12

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