Total No. of Printed Pages—3

3 SEM TDC BOTH (CBCS) C 7

2022

(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 correct answer of the following : 1×3=3

(i) The F2 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.

(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

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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