Total No. of Printed Pages—3

5 SEM TDC ZOOH (CBCS) C 12

2021

(Held in January/February, 2022)

ZOOLOGY

(Core)

Paper : C–12

(Principles of Genetics)

Full Marks : 53

Pass Marks : 21

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. Fill in the blanks with appropriate words : 1×5=5

(a) The number of linkage group in human male is _____.

(b) The sequence of DNA coding for a functional protein is called _____.

(c) The genotypic ratio in F_1 generation of monohybrid cross is _____.

(d) _____ is an example of sex-linked inheritance.

(e) Abnormality in the structure of chromosome is known as chromosomal _____.

2. (a) Write briefly on any *two* of the following : 3×2=6

(i) Lethal alleles

(ii) Pleiotropy

(iii) Polygenic inheritance

(b) Distinguish between any *two* of the following : 3×2=6

(i) Transformation and Transduction

(ii) Complete linkage and Incomplete linkage

(iii) Recombination and Hybridization

3. Define incomplete dominance and codominance. Explain each with suitable examples. 4+5=9

Or

Write explanatory note on crossing over. Describe how crossing over can be used to measure the relative distance between genes in a chromosome. 4+5=9

4. Define epistasis. Explain dominant epistasis with suitable example. 3+6=9

Or

Explain the mechanism of sex determination in *Drosophila*. 9

5. What is mutation? Describe different types of gene mutations. 2+7=9

Or

What is extrachromosomal inheritance? Explain with suitable example. 2+7=9

6. What are transposons? Give examples of transposable elements in bacteria and human. 2+7=9

Or

What is a bacteriophage? Explain the mechanism of gene conjugation in bacteria. 2+7=9

★ ★ ★