Total No. of Printed Pages—3

5 SEM TDC ZOO M 1

2018

(November)

ZOOLOGY

(Major)

Course : 501

(Genetics and Evolution)

Full Marks : 48

Pass Marks : 19/14

Time : 2 hours

The figures in the margin indicate full marks for the questions

1. *(a)* Fill in the blanks with appropriate words : 1×4=4

(i) The portion of DNA specifying a single-polypeptide chain is termed as _____.

(ii) The change of position of genes that changes the structure of chromosome is known as _____.

(iii) The set of genetic information carried by all members of a population which can interbreed, is called _____.

(iv) The number of linkage group in man is _____.

(b) Answer any *four* of the following questions very briefly : 2×4=8

(i) Distinguish between gene and allele with examples.

(ii) Explain why Mendel's principle of segregation is universal.

(iii) What is epistasis? Give an example.

(iv) Under what conditions the gene frequency in the individuals of a population remains constant?

(v) What are the three basic factors those are responsible for genetic variation in modern synthetic theory?

2. Define complete dominance and explain it with an example that it is not always true. 2+5=7

Or

What is crossing-over? Describe how crossing-over can be used to measure the relative distances between the genes in a chromosome. 2+5=7

(Continued)

3. What is genome? Write an account on fine structure of gene. 2+5=7

Or

What is inborn error? Explain some inborn errors in metabolism. 1+6=7

4. What is adaptive radiation? Explain with an example. 2+5=7

Or

Explain divergent and convergent evolutions. 7

5. What is fossil? Write a note on the process of fossilization. 2+5=7

Or

What is variation? Describe the different types of variations found in living organisms. 1+6=7

6. Write short notes on any *two* of the following : 4×2=8

(a) Neo-Darwinism

(b) Speciation

(c) Human Genome Project

(d) Cytoplasmic Inheritance

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