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5 SEM TDC ZOO M 1

2021

(March)

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 phenotypic ratio of Mendel's monohybrid cross is _____.
- (ii) An individual having dissimilar _____ is called heterozygous for particular character.

(iii) Time of recent life in geological time scale is called ____ era.

(iv) ____ was the first hybridist who used the term 'mutation'.

(b) Answer/Write notes on any four of the following very briefly : 2×4=8

(i) Distinguish between gene and allele.

(ii) Distinguish between inhibitory factor and lethal factor.

(iii) Distinguish between phenotype and genotype.

(iv) Distinguish between autosome and sex chromosomes.

(v) Extra-chromosomal inheritance

2. What is crossing-over? Explain the phenomenon with the help of a suitable example. 1+6=7

Or

What is sex-linked inheritance? Explain chromosomal basis of sex-linked inheritance. 2+5=7

3. What is mutation? Explain chromosomal mutation in terms of structure of chromosomes. 1+6=7

(3)

Or

What is karyotyping? Explain genetic disorders in men caused by autosomal gene. 7

4. What is gene frequency? Explain Hardy-Weinberg law in terms of gene frequency. 1+6=7

Or

Explain about 'chemical origin' of life according to Haldane and Oparin. 7

5. Give an account of Darwin's theory of natural selection. 7

Or

What is speciation? Explain allopatric and peripatric speciations with examples. 1+6=7

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

- (a) Incomplete dominance
- (b) Inborn error in metabolism
- (c) Complementary factor
- (d) Epistasis
