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**5 SEM TDC ZOO M 1**

**2019**

( 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 term 'genetics' has been termed by \_\_\_\_\_.

(ii) The number of linkage groups in man is \_\_\_\_\_.

(iii) The evolutionary history of an organism is called \_\_\_\_\_.

(iv) Mesozoic era is called the era of \_\_\_\_\_.

( 2 )

(b) Answer any four of the following questions very briefly :  $2 \times 4 = 8$

(i) Distinguish between complementary factors and supplementary factors.

(ii) Distinguish between autosome and sex chromosome.

(iii) What is Mendel's law of segregation?

(iv) Mention the factors of genetic variation in modern synthetic theory.

(v) What is epistasis? Give an example.

2. Why is incomplete dominance an intermediate inheritance? Explain epistasis in terms of gene interaction.  $2+5=7$

Or

What is gene interaction? Explain gene interaction between dominant factors.  $2+5=7$

3. What is mutation? Explain chromosomal mutation with significance.  $2+5=7$

Or

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

( 3 )

4. What is genetic drift? Explain Hardy-Weinberg law related to gene frequency.

1+6=7

Or

What is meant by convergent and divergent evolution? Write about continental drift theory.

$1\frac{1}{2}+1\frac{1}{2}+4=7$

5. Explain sympatric and allopatric types of speciation with examples.

$3\frac{1}{2}\times 2=7$

Or

What is fossil? Write a note on the process of fossilization.

1+6=7

6. Write short notes on any *two* of the following :

$4\times 2=8$

- (a) Human Genome Project
- (b) Gene mapping
- (c) Connecting link
- (d) Living fossil

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