

This question paper contains 4+2 printed pages]

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M.Sc. (II Semester) Examination, 2019

ZOOLOGY

Paper Z-08

(Genetics)

Time Allowed : Three Hours

Max. Marks : 70

Min. Pass Marks : 28

*This question paper will be divided into
three sections as under :*

Section-A

Max. Marks-10

Will carry 10 marks with one compulsory question comprising 10 short answer type questions (maximum 20 words answer) taking two questions from each unit. Each question shall be of one mark.

Section-B

Max. Marks-25

Will carry 10 questions, 02 questions from each unit (answer about in 250 words). Students are instructed to attempt five questions by selecting one question from each unit.

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Section-C

Max. Marks-35

Will carry 35 marks with five long answer type questions comprising one compulsory question (Question No. 7) of 15 marks and four questions of 10 marks each. Students are instructed to attempt total three questions with one compulsory question (answer about in 500 words) and any two more questions (answer about in 400 words) out of remaining four questions.

SECTION-A

- ✓ (i) What are allosomes ? 1
- (ii) Differentiate genotype from phenotype. 1
- (iii) What do you mean by multiple allele ? 1
- ✓ (iv) What are transposons ? 1
- ✓ (v) Name a sex influenced character. 1
- ✓ (vi) What is eugenics ? 1
- ✓ (vii) How are z-DNA different from B-DNA ? 1
- ✓ (viii) What is the function of topoisomerase ? 1
- ✓ (ix) What are chaperons ? 1
- ✓ (x) What are ribozymes ? 1

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SECTION-B

UNIT-I

2. Explain the significance of Back-cross. 5

Or

Write short notes on any two of the following : $2\frac{1}{2}+2\frac{1}{2}$

- (i) Homologous chromosomes
- (ii) Hemizygous condition
- (iii) Symbols in genetic cross.

UNIT-II

3. Describe incomplete dominance with the help of example. <https://www.uokononline.com> 5

Or

Write short notes on any two of the following : $2\frac{1}{2}+2\frac{1}{2}$

- (i) Law of independent assortment
- (ii) Linkage groups
- (iii) Accessory genetic elements.

UNIT-III

4. Explain chromosomal basis of sex determination with examples. 5

Or

Write short notes on any two of the following : $2\frac{1}{2}+2\frac{1}{2}$

- (i) Criss-cross inheritance
- (ii) Down's syndrome
- (iii) Genetic counselling.

UNIT-IV

5. Explain the process of DNA replication. 5

Or

Write short notes on any two of the following : $2\frac{1}{2}+2\frac{1}{2}$

- (i) DNA repair
- (ii) Hn RNA
- (iii) RNA polymerase.

UNIT-V

- ✓ 6. What do you mean by positive and negative gene regulation ? Explain with examples. 5

Or

Write short notes on any two of the following : 2½+2½

- (i) Tryp Operon
- (ii) Gene regulatory protein
- (iii) RNA interference.

SECTION-C

- ✓ 7. Compulsory Question :

What is the importance of eugenics ? Explain positive and negative eugenics. 15

8. Explain the mechanism of crossing-over. 10 ?

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9. Describe the post-replicative changes in h_n RNA. 10

- ✓ 10. Give an account on the structure and types of RNA. 10

11. What is the principle of RFLP ? Describe the steps involved in RFLP. 10

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