2016

(6th Semester)

ZOOLOGY

Paper : ZL–IX

(Molecular Biology and Genetics)

Full Marks : 55

Time : 2½ hours

(PART : B—DESCRIPTIVE)

(*Marks* : 35)

The figures in the margin indicate full marks for the questions

1. Describe in detail the structure of DNA. 7

Or

Write a short note on polytene and lambrush chromosome. 3½×2=7

2. Discuss the nucleotide excision, base excision and mismatch repair systems of DNA. 7

Or

Explain the semi-conservative method of DNA replication. 7

3. Describe the process of transcription in prokaryotic cell. 7

Or

What is an 'operon'? Write a short note on *lac* operon. 2+5=7

4. Explain Mendel's laws of inheritance. 7

Or

What is cytoplasmic inheritance? Explain it with two suitable examples. 7

5. What is mutation? Explain different types of gene mutation. 7

Or

Write short notes on the following : 7

(a) Haemophilia

(b) Turner's Syndrome

★★★

Subject Code : ZOO/VI/09

Booklet No. A

Date Stamp .....

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To be filled in by the Candidate

DEGREE 6th Semester
(Arts / Science / Commerce / .....) Exam., **2016**

Subject .....

Paper .....

INSTRUCTIONS TO CANDIDATES

1. **The Booklet No. of this script should be quoted in the answer script meant for descriptive type questions and vice versa.**
2. **This paper should be ANSWERED FIRST and submitted within** *45 minutes* **of the commencement of the Examination.**
3. **While answering the questions of this booklet, any cutting, erasing, over-writing or furnishing more than one answer is prohibited. Any rough work, if required, should be done only on the main Answer Book. Instructions given in each question should be followed for answering that question only.**

To be filled in by the Candidate

DEGREE 6th Semester
(Arts / Science / Commerce / .....) Exam., **2016**

Roll No. .....

Regn. No. .....

Subject .....

Paper .....

Descriptive Type

Booklet No. B .....

Signature of Scrutiniser(s) *Signature of Examiner(s)* *Signature of Invigilator(s)*

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(6th Semester)

ZOOLOGY

Paper : ZL–IX

(Molecular Biology and Genetics)

(PART : A—OBJECTIVE)

(*Marks* : 20)

The figures in the margin indicate full marks for the questions

SECTION—A

(*Marks* : 5)

Put a Tick (✓) mark against the correct answer in the brackets provided : 1×5=5

1. Which one of the following is heterochromatin?

(a) One X chromosome of human female ( )

(b) 21st chromosome in human male ( )

(c) XXY chromosome in human male ( )

(d) XO chromosome in drosophila ( )

2. In DNA replication, the strand which is synthesized continuously is called

(a) Okazaki fragments ( )

(b) lagging strand ( )

(c) leading strand ( )

(d) template strand ( )

3. Which one of the following is involved in the synthesis of mRNA?

(a) RNA polymerase I ( )

(b) RNA polymerase II ( )

(c) RNA polymerase III ( )

(d) All of the above ( )

4. ABO blood group is an example of

(a) sex-linked inheritance ( )

(b) non-disjunction of chromosomes ( )

(c) pleiotropic genes ( )

(d) multiple allelism ( )

5. Monosomy with a loss of one X chromosome in human is

(a) Klinefelter's syndrome ( )

(b) Turner's syndrome ( )

(c) Down's syndrome ( )

(d) Haemophilia ( )

SECTION—B

(*Marks* : 15)

Answer/Write short notes on the following in *5* to *8* sentences each : 3×5=15

1. Draw a labelled diagram of tRNA.

2. Double strand breakage and repair of DNA

3. RNA polymerase

4. Pleiotropism

5. Non-disjunction of chromosome

★★★