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(Pages : 2)

Name.....

Reg. No.....

**FOURTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION
APRIL 2025**

Zoology

ZOL 4C 04T—GENETICS AND IMMUNOLOGY

(2019—2023 Admissions)

Time : Two Hours

Maximum : 60 Marks

Section A

I. Short Answer Questions. Each question carries 2 marks :

- 1 Name two sex - chromosomal anomalies.
- 2 What is Amniocentesis ?
- 3 Explain Gynandromorphism.
- 4 What are Pseudogenes ?
- 5 Comment on cistrons.
- 6 What are Plasmids ?
- 7 What is reverse transcriptase ?
- 8 Distinguish between sarcoma and lymphoma.
- 9 What is innate immunity ?
- 10 What are Cytokines ?
- 11 What are monoclonal antibodies ?
- 12 Comment on DNA vaccines.

(Ceiling : 20 marks)

Section B

II. Paragraph Questions. Each question carries 5 marks :

- 13 Describe the Denver scheme of classification of human chromosome.
- 14 Explain chromosomal mechanism of sex determination.

Turn over

- 15 Define genetic code. Mention its salient features.
- 16 Explain various gene transfer techniques.
- 17 Enumerate the characteristics of cancer cells.
- 18 Write an account on any *two* secondary lymphoid organs.
- 19 Write notes on Western and Northern blotting techniques.

(Ceiling : 30 marks)

Section C

III. Essay Questions. Answer any *one* question :

- 20 Give an account of the enzymes involved in rDNA technology.
- 21 Write an essay on immunodeficiency diseases.

(1 × 10 = 10 marks)

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**FOURTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION
APRIL 2024**

Zoology

ZOL4C04T—GENETICS AND IMMUNOLOGY

(2019 Admission onwards)

Time : Two Hours

Maximum : 60 Marks

Section A

I. Short answer questions. Each question carries 2 marks :

- 1 What is Down's syndrome ?
- 2 Comment on eugenics.
- 3 Explain genic balance theory of sex determination.
- 4 What are transposons ?
- 5 Define transcription and translation.
- 6 Comment on DNA polymerase and ligase in rDNA technology.
- 7 Mention the potential hazards of genetic engineering.
- 8 What is metastasis ?
- 9 What are haptens ?
- 10 Comment on agglutination reaction.
- 11 What is ELISA ?
- 12 Name two autoimmune diseases.

(Ceiling : 20 marks)

Turn over

Section B

II. Paragraph questions. Each question carries 5 marks :

- 13 Write an account on prenatal diagnosis.
- 14 Explain X - linked inheritance with reference to colour-blindness.
- 15 Briefly explain chromosomal mechanism of sex determination.
- 16 What are cloning vectors? Comment on different vectors used in rDNA technology.
- 17 Write notes on different types of cancer.
- 18 Write an account on different types of vaccines.
- 19 Differentiate between humoral and cell mediated immunity.

(Ceiling : 30 marks)

Section C

III. Essay questions. Answer any *one* question :

- 20 Describe the various steps involved in the construction of recombinant DNA.
- 21 Write an essay on cells of immune system.

(1 × 10 = 10 marks)

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APRIL 2023**

Zoology

ZOL 4C 04T—GENETICS AND IMMUNOLOGY

(2019 Admission onwards)

Time : Two Hours

Maximum : 60 Marks

Section A

I. Short Answer Questions. Each question carries 2 marks :

- 1 What are Autosomes ?
- 2 What is Karyotyping ?
- 3 Distinguish between cellular and humoral immunity.
- 4 What are split genes ?
- 5 What are carcinogens ? Give an example.
- 6 What is Metastasis ?
- 7 What are monoclonal antibodies ? Write any *one* application.
- 8 Write any *two* enzymes and their role in recombinant DNA technology.
- 9 What is RIA ? Write its applications.
- 10 What are Vaccines ? Give an example.
- 11 Mention any *two* methods of gene transfer used in genetic engineering.
- 12 Comment on the genic balance theory of sex determination.

(Ceiling:20 marks)

Section B

II. Paragraph Questions. Each question carries 5 marks :

- 13 Briefly explain the genetic basis of color blindness.
- 14 Give a brief description on cloning vectors.

Turn over

- 15 Write the principle and applications of DNA finger printing.
- 16 Briefly describe the concept of polygenic inheritance.
- 17 Write a note on different types of cancer.
- 18 Write an account on Immunodeficiency Syndrome.
- 19 Write a brief note on eugenics, euthenics and euphenics.

(Ceiling : 30 marks)

Section C

III. Essay Questions. Answer any *one* question :

- 20 Describe the various immunoglobulin gene families.
- 21 Write an essay on chromosomal mechanism of sex determination.

(1 × 10 = 10 marks)