

C 21320

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Name.....

Reg. No.....

**FOURTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION
APRIL 2022**

Zoology

ZOL 4C 04—GENETICS AND IMMUNOLOGY

(2014—2018 Admissions)

Time : Three Hours

Maximum : 64 Marks

Part AI. One Word Questions. Answer *all* questions. Each question carries 1 mark :

- 1 Transfer of RNA from gel to nitrocellulose paper is termed as _____.
- 2 Each cell in an individual with Turner's syndrome contains _____ number of chromosomes.
- 3 Hershey and Chase experiments helped to confirm that _____ is the genetic material of phages.
- 4 Write the full form of 'MHC' locus.
- 5 Cancerous tumor of connective tissue is known as _____.
- 6 Coding part of split genes are called _____.
- 7 Genes similar to normal genes but non-functional is _____.
- 8 The chromosome which is involved in sex linked inheritance _____.
- 9 Who discovered Barr body ?
- 10 Antibodies that impart neonatal immunity are _____.

(10 × 1 = 10 marks)

Part BII. Short Answer Questions. Answer any *seven* of the following. Each question carries 2 marks :

- 11 Immunoprecipitation.
- 12 Vaccine.
- 13 Metastasis.

Turn over

- 14 Eugenics.
- 15 Karyotype.
- 16 Restriction endonucleases.
- 17 Gynandromorph.
- 18 Acquired immunity.
- 19 Amniocentesis.
- 20 Carcinoma.

(7 × 2 = 14 marks)

Part C

III. Paragraph Questions. Answer any *four* questions. Each question carries 5 marks :

- 21 Write the methodology and applications of southern blotting.
- 22 Give an account on the potential hazards of genetic engineering.
- 23 Explain Hershey and Chase experiment.
- 24 Give an account on organs and cells of immune system.
- 25 Differentiate between benign and malignant tumor. Explain the various theories on the origin of cancer.
- 26 Give an outline of translation process.

(4 × 5 = 20 marks)

Part D (Essay Questions)

IV. Answer any *two* questions. Each question carries 10 marks :

- 27 Describe the structure of a typical chromosome. Explain the karyotype, classification and grouping of human chromosomes based on Patua's and Denver scheme.
- 28 With suitable diagram explain the basic steps involved in recombinant DNA technology. Add a note on the role of enzymes involved in genetic engineering.
- 29 Explain the different types of immune responses. Add a note on the structure of a typical immunoglobulin.
- 30 Explain the various mechanisms involved in sex determination.

(2 × 10 = 20 marks)