C 23332 (Pages : 2) Name.....

Reg. No.....

FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2017

(CUCBCSS–UG)

Complementary Course

ZOL 4C 04—GENETICS AND IMMUNOLOGY

Time : Three Hours Maximum : 64 Marks

I. Answer *all* questions :

A. Name the following :

1 Extra chromosomal circular DNA found in bacteria.

2 Scientist who proposed One Gene One Polypeptide hypothesis.

3 Lymphoid organ where T lymphocytes are formed.

4 Application of knowledge of heredity to improve the characteristics of future human generation.

5 Blotting technique for the analysis of protein.

B. Fill in the blanks :

6 The inheritance of Diabetes mellitus is an example of ————.

7 Inactive genes that are not translated to proteins are called ————.

8 The gene for Colour blindness is located on ———— chromosome.

9 In Sickle Cell Anaemia, Glutamic acid is replaced by ————.

10 ———— is known as "father of human genetics".

(10 × 1 = 10 marks)

II. Answer any *seven* questions :

11 Describe Phenylketonuria.

12 Explain Hybridoma technology.

13 Explain the technique of ELISA.

14 Write note on Central Dogma.

15 What are Vaccines ? How they give immunity to body ?

16 Write note on AIDS.

17 Write the applications of DNA fingerprinting.

18 Differentiate between Active immunity and Passive immunity.

19 Write the role of Lymphocytes in maintaining immunity.

20 Differentiate between Introns and Exons.

(7 × 2 = 14 marks)

Turn over

III. Answer any *four* questions :

21 Explain Criss Cross Inheritance with an example.

22 Explain the practical applications of Genetic engineering.

23 Explain Hershey and Chase experiment to prove DNA as genetic material.

24 Explain various theories on origin of Cancer.

25 Briefly explain any two prenatal diagnostic techniques.

26 Explain sex determination in Drosophila based on sex index.

(4 × 5 = 20 marks)

IV. Answer any *two* questions :

27 Explain various steps in rDNA technology.

28 What are Antibodies ? Explain the structure of a typical antibody.

29 Explain different types of immunity.

30 Briefly explain different types of Cancer. Add a note on characteristics of Cancer cells.

(2 × 10 = 20 marks)