

**D 40081**

(Pages : 2)

Name.....

Reg. No.....

**SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH/APRIL 2018**  
(CUCBCSS—UG)

**Zoology**

**ZOL 6B 14—BIOTECHNOLOGY, MICROBIOLOGY AND IMMUNOLOGY**

Time : Three Hours

Maximum : 80 Marks

**Part A**

I. Answer *all* questions in one or two sentences. Each question carries one mark

- 1 Comment on haptens.
- 2 Mention the principle of PCR.
- 3 What are palindromic sequences ?
- 4 What are primary cell cultures ?
- 5 Distinguish between viroids and prions.
- 6 Give the names of two plasmodium species and the disease caused by them.
- 7 Comment on candidiasis.
- 8 What are dendritic cells ?
- 9 Name a bacterium used in mining operations.
- 10 What are Bioreactors ?

(10 × 1 = 10 marks)

**Part B**

II. Answer any *ten* of the following. Each question carries two marks

- 11 Explain two different methods of joining DNA molecules.
- 12 Mention any *two* applications of PCR.
- 13 Comment on DNA fingerprinting.
- 14 Explain the significance of Biofiltration.
- 15 Outline any *four* differences between prokaryotes and eukaryotes.
- 16 List out four salient features of bacteria.

**Turn over**

- 17 What are nutraceuticals ?
- 18 Comment on the composition of culture media.
- 19 Differentiate between active and passive immunity.
- 20 What do you mean by biological weapons ?
- 21 Define adjuvants and mention their role in immunity.
- 22 Comment on NK cells and its function.

(10 × 2 = 20 marks)

#### Part C

III. Answer any *five* of the following. Each question carries 6 marks :

- 23 Describe the general properties of immunoglobulins
- 24 What is recombinant DNA technology ?
- 25 Comment on different blotting techniques.
- 26 Sketch and label a typical bacterial cell and give a brief description of its structure.
- 27 Discuss the role of bone marrow in immunity.
- 28 Give a brief account on normal microbiota of human gastrointestinal tract.
- 29 Write a short account on the products of industrial microbiology.
- 30 Briefly describe hybridoma technology and its applications.

(5 × 6 = 30 marks)

#### Part D

IV. Answer any *two* of the following. Each question carries 10 marks :

- 31 Explain the applications and potential hazards of biotechnology.
- 32 Discuss the applications of microbiology in biological warfare, highlighting the advantages and disadvantages.
- 33 Outline the steps involved in PCR.
- 34 Discuss the role of microbes in biotechnology.

(2 × 10 = 20 marks)