

C 80070

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Name.....

Reg. No.....

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH/APRIL 2015

(UG-CCSS)

Core Course

Zoology

ZO 6B 16—BIOTECHNOLOGY, MICROBIOLOGY AND IMMUNOLOGY

Time : Three Hours

Maximum : 30 Weightage

*Answer may be written either in English or Malayalam.  
Give illustrations wherever necessary.*

I. Answer all twelve questions. Each question carries 0.25 weightage :

A. Objective type questions :

1 Which of the following is responsible for graft rejection ?

- (a) Cytokines. (b) Histocompatibility antigens.  
(c) Interleukins. (d) Interferons.

2 Which of the following can cross human placenta ?

- (a) IgG. (b) IgA.  
(c) IgM. (d) IgD.

3 The enzyme that removes nucleotides one by one from the end of a polynucleotide chain :

- (a) Exonuclease. (b) Endonuclease.  
(c) Reverse transcriptase. (d) DNA polymerase.

4 Which of the following is a primary lymphoid organ ?

- (a) Spleen. (b) Lymph nodes.  
(c) Thymus. (d) Peyer's patches.

B. Match the following :—

A

B

5 Autoimmune disease

— Antigen.

6 Spleen

— Antibody.

7 Allergy

— Lymphoid organ.

8 B lymphocytes

— Grave's disease.

— Histamine.

Turn over

## C. Fill in the blanks :

- 9 \_\_\_\_\_ are submicroscopic, acellular infectious particles that can only replicate inside a living cell.
- 10 \_\_\_\_\_ are hair like appendages protruding from the bacterial cell wall.
- 11 \_\_\_\_\_ is the enzyme that facilitates the joining of DNA strands together.
- 12 \_\_\_\_\_ is responsible for cell mediated immunity.

(12 × ¼ = 3 weightage)

II. Short answer questions - Answer all *nine* questions :

- 13 What are viroids ?
- 14 Define plasmid.
- 15 Name any two bacterial diseases in human.
- 16 What is restriction endonuclease ?
- 17 What is a bacteriophage ?
- 18 Define Antibody.
- 19 What are capsomeres ?
- 20 List any two features of algae.
- 21 What are interferons ?

(9 × 1 = 9 weightage)

III. Short answer questions. Answer any *five* questions :

- 22 Write an account on humoral immunity.
- 23 Briefly describe industrial applications of microbes.
- 24 What are monoclonal antibodies ? Mention its uses.
- 25 What are cytokines ?
- 26 Write an account on recombinant DNA technology.
- 27 List any four characteristics of bacteria.
- 28 What do you mean by FISH ?

(5 × 2 = 10 weightage)

IV. Essay questions. Answer any *two* questions :

- 29 What are transgenic animals ? Mention its uses.
- 30 Briefly describe the structure of a typical bacterium with the help of a diagram.
- 31 Briefly describe different immunoglobulins and their biological functions.

(2 × 4 = 8 weightage)