



AR-1904

Seat No. _____

B. Sc. (Biotechnology) (Sem. VI) Examination

March / April - 2018

CBT - 11 : Fundamentals of Immunology
(Core Course)

Time : 3 Hours]

[Total Marks : 70

1 Answer all questions. Each question carries 1 mark : $1 \times 15 = 15$

(1.1) Correct hormones group of thymus

- (A) Thymulin & thymolectin
- (B) Thymolipid
- (C) Beta 4 thymosinon
- (D) Thymulinon

(1.2) Examples of APC

- (A) Macrophages
- (B) Dendritic cells
- (C) A+B
- (D) None of them

(1.3) Paratopes are located at

- (A) Foreign parts
- (B) Antibody
- (C) Antigen
- (D) Haptens

(1.4) Antibodies are composed of

- (A) Lipoproteins
- (B) Fatty acids
- (C) Glycoprotein
- (D) Peptidoglycan

(1.5) Delta gene represented which antibodies ?

- (A) IgG
- (B) IgE
- (C) IgM
- (D) IgD

(1.6) Example of Primary organs

(1.7) Types of W.B.C.

(1.8) - (1.10) Expand of following

MHC, MALT, GALT

(1.11) - (1.15) Match following :

- | | |
|-----------------|--------------------------------|
| (A) CR1 AND CR3 | (1) Opsonisation receptor |
| (B) C3b | (2) Complement system receptor |
| (C) CD4 | (3) Macrophages receptors |
| (D) IL1 | (4) Complementary protein |
| (E) C9 | (5) T-helper cells |

2 Answer any **five** questions each carries **5×5=25**
5 marks :

(2.1) Define immunology and their types

(2.2) Describe structure of antibodies and biological importance

(2.3) Write types of Antigen and explain it

- (2.4) Describe organs of immunity with diagram
- (2.5) Explain diversity of antibodies in human being
- (2.6) Describe agglutination and precipitation
- (2.7) Describe following terms :
 - (1) Haptens & Carrier
 - (2) Epitopes & Paratopes.

3 Answer any **three** questions each carries **10×3=30**
10 marks :

- (3.1) Explain types and role of B-cells in immune system.
 - (3.2) Explain various cells of immunity
 - (3.3) Explain monoclonal antibody and hybridoma technology
 - (3.4) Describe immunity and immune responses.
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