



27271-31643-42911



BRAINWARE UNIVERSITY

Term End Examination 2025-2026

Programme – B.Sc.(MLT)-2022/B.Sc.(MLT)-2023/B.Sc.(MLT)-2024

Course Name – Clinical Immunology & Serology

Course Code - BMLTC401

(Semester IV)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) Identify the sample where you can find lysozyme.
 - a) CSF
 - b) Saliva
 - c) Sweat
 - d) urine
- (ii) Select the true statement about immunoglobulins
 - a) IgM fixes complement
 - b) IgG does not cross placenta
 - c) IgE binds to phagocytes
 - d) IgA binds to mast cells
- (iii) Choose the option that is not a function of complement protein.
 - a) phagocytosis
 - b) Inflammatory response
 - c) Antigen presentation
 - d) Immune clearance
- (iv) Choose the correct term used for the process of weakening a pathogen.
 - a) vaccination
 - b) attenuation
 - c) immunization
 - d) virulence reduction
- (v) Choose the correct speed for rotating RPR slide.
 - a) 1000RPM for 8 mins
 - b) 100RPM for 8 mins
 - c) 500RPM for 8 mins
 - d) 200RPM for 8 mins
- (vi) Select the correct definition of biomarkers.
 - a) biological marker pen that marks particular organ for diagnosis
 - b) a characteristic that is objectively measured and evaluated as an indicator of normal biological processes
 - c) It is a marker that is eco friendly that used in cancer diagnosis
 - d) It's a biological process of marking a particular body parts
- (vii) Choose the option that holds true for delayed type hypersensitivity.
 - a) Antibody mediated
 - b) Passive transfer possible with serum
 - c) Induced by antigens through any route
 - d) Desensitization difficult, but long lasting

- (viii) The antibody binding site of an antigen is known as
a) Paratope. b) Agretope.
c) Epitope. d) None of the options are correct.
- (ix) Where do B cells undergo clonal expansion and differentiation into plasma cells?
a) Lymph node b) Spleen
c) Bone marrow d) Thymus
- (x) Choose the type of immunity that provides immediate protection but short-lived immunity.
a) Active immunity b) Innate immunity
c) Passive immunity d) Humoral immunity
- (xi) How do vaccines contribute to immunity?
a) By providing passive immunity b) By stimulating the production of memory cells
c) By activating natural killer cells d) By suppressing the immune response
- (xii) Select the type of antigen-antibody reaction that involves the formation of a lattice network.
a) Precipitation reaction b) Agglutination reaction
c) Neutralization reaction d) Complement fixation reaction
- (xiii) Choose the option regarding the role of the Fc region of antibodies in antigen-antibody reactions.
a) Binding to antigens b) Activating complement proteins
c) Initiating phagocytosis d) Interacting with Fc receptors on immune cells
- (xiv) Select the option indicating the effect of haemolytic anemia on red blood cells.
a) It increases red blood cell production b) It causes destruction of red blood cells by the immune system
c) It decreases red blood cell size d) It promotes white blood cell production
- (xv) In Widal test, what does a positive result indicate?
a) The presence of antibodies b) The absence of antigens
c) The presence of antigens d) The absence of antibodies

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Discuss in brief about 3 autoimmune diseases. (3)
3. Explain the components of acquired immune system. (3)
4. Discuss about cross reactivity in brief. (3)
5. Distinguish between Innate and Adaptive immunity on the basis of cells involved and effector mechanism. (3)
6. Evaluate the reliability and accuracy of the Widal test in diagnosing enteric fever. (3)

OR

Examine the factors that can influence the interpretation of Widal test results, such as previous vaccination or exposure to related pathogens. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Discuss the exogenous pathway of antigen presentation by MHC molecules. (5)
8. With suitable diagram explain the structure and activity of Light Chain and Heavy chain of immunoglobulins in details. (5)
9. Explain what happens when our body encounters an antigen that is recognized as non self. (5)

10. Compare and contrast humoral and cell-mediated immunity, detailing the specific immune cells and molecules involved in each type of response. (5)
11. Analyze the role of CRP in the human body's immune response and inflammation. (5)
12. Compare and contrast the antigen-binding specificities of monoclonal antibodies versus polyclonal antibodies. (5)

OR

Analyze and compare the structural features of the variable and constant regions of an antibody molecule. (5)

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Brainware University
Sarasat, Kolkata -700125

September 19

Full Marks: 50

Time: 2.00 hours

The figures in the margins indicate the marks assigned to each question. You are requested to write answers in their own hand.

Group-A

Answer the following questions in brief.

Time: 30 mins

1. Choose the correct option for the following:

Time: 10 mins

(i) Identify the correct statement about the following:

Time: 10 mins

a) CRP

b) IL-1

c) Sweet

d) None

(ii) Select the correct statement about the following:

a) Light chain synthesis

b) Heavy chain synthesis

c) Light chain synthesis

d) Heavy chain synthesis

(iii) Choose the correct statement about the following:

a) Inflammation

b) Inflammation

c) Inflammation

d) Inflammation

(iv) Choose the correct statement about the following:

a) Inflammation

b) Inflammation

c) Inflammation

d) Inflammation

(v) Choose the correct statement about the following:

a) Inflammation

b) Inflammation

c) Inflammation

d) Inflammation

(vi) Select the correct statement about the following:

a) Biological marker that is directly measured

b) Biological marker that is indirectly measured

c) Biological marker that is directly measured

d) Biological marker that is indirectly measured

e) Biological marker that is directly measured

f) Biological marker that is indirectly measured

g) Biological marker that is directly measured

h) Biological marker that is indirectly measured

i) Biological marker that is directly measured

j) Biological marker that is indirectly measured

(vii) Choose the option that adds most to delayed type hypersensitivity:

a) Antibody mediated

b) T-cell mediated

c) T-cell mediated

d) T-cell mediated