



# BRAINWARE UNIVERSITY

**Term End Examination 2021 - 22**

**Programme – Bachelor of Science (Honours) in Biotechnology**

**Course Name – Immunology**

**Course Code - BBTC402**

**( Semester IV )**

**Time allotted : 1 Hrs.15 Min.**

**Full Marks : 60**

[The figure in the margin indicates full marks.]

## Group-A

(Multiple Choice Type Question)

1 x 60=60

*Choose the correct alternative from the following :*

- (1) The lymphatic system consists of all the following except
 

a) blood	b) lymph nodes
c) lymphatic vessels	d) lymph
- (2) The T-lymphocytes and B-lymphocytes are the major cells of the
 

a) lymph nodes	b) lymphatic vessels
c) adrenal gland	d) thymus
- (3) The thymus is largest and most visible
 

a) in the teenage years	b) in senior citizen
c) between the ages of six and 12 years	d) in the fetal stage
- (4) All the cells of the immune system arise from
 

a) cells in the synoatrial node	b) primitive cells in the bone marrow
c) primitive cells in the thymus	d) cells located primarily in the pons of the brain
- (5) T-lymphocytes are so named because they are produced primarily in the
 

a) thyroid gland	b) tissues of the thorax
c) tissues stimulated by the trigeminal nerve	d) thymus
- (6) Which of the following is true of antibody molecules?
 

a) there are five different types of antibody molecules	b) all antibody molecules are composed of polysaccharide
c) an antibody molecule is often depicted as a Y	d) one end of an antibody is highly specific for b

inding an antigen

- (7) Aggregates of lymphoid nodules located in the wall of the ileum of the small intestine are-----
- a) Werner's nodes
  - b) ileal tonsils
  - c) Peyer's patches
  - d) submucosal tonsils
- (8) Collections of lymphoid tissue (MALT) that guard mucosal surfaces include all the following, except-----
- a) appendix nodules
  - b) the thymus
  - c) tonsils
  - d) Peyer's patches
- (9) Which of the following is the major lymphoid organ that "trains" T lymphocytes to become immunocompetent?
- a) Peyer's patches
  - b) spleen
  - c) tonsils
  - d) thymus
- (10) Which of the following are the principal lymphoid organs in the body?
- a) Peyer's patches
  - b) spleen
  - c) lymph nodes
  - d) tonsils
- (11) Areas of lymphocytes suspended by reticular fibers in the spleen are known as-----
- a) medullary cords
  - b) red pulp
  - c) lymph sinuses
  - d) white pulp
- (12) The two types of immunity in humans are
- a) intrinsic and extrinsic
  - b) internal and external
  - c) overt and covert
  - d) innate and the acquired
- (13) Another name for innate immunity
- a) is immunity
  - b) is explicit immunity
  - c) is non-specific immunity
  - d) is specific immunity
- (14) The two types of lymphocytes are
- a) B-cells and T-cells
  - b) T-cells and erythrocytes
  - c) platelets and erythrocytes
  - d) platelets and T-cells
- (15) The only blood cells that are not considered to be part of the immune system are
- a) fat cells
  - b) the osteocytes
  - c) the red blood cells
  - d) Glial cells
- (16) The physical barriers that form part of the immune system are
- a) the bones and the mucosal membranes
  - b) the skin and the mucosal membranes
  - c) the skin, body temperature and the mucosal membranes
  - d) the skin and the mucosal membranes
- (17) Chemical barriers include
- a) tears and urine
  - b) tears, breast milk, sweat, saliva, stomach acid
  - c) tears, breast milk, sweat, saliva, stomach acid and faeces
  - d) hair, breast milk, sweat, saliva, stomach acid
- (18) Antigen binding is associated with
- a) Immunoglobulin fold
  - b) Hypervariable region

- c) Framework region  
d) Immunoglobulin domain
- (19) A lymphocyte that is not antigen-specific is  
a) B cell  
b) T cell  
c) NK cell  
d) Macrophage
- (20) Any substance or molecules that interact with antibodies are called?  
a) Antigens  
b) Antibodies  
c) Epitope  
d) Immunes
- (21) Antigens can be  
a) Proteins  
b) Carbohydrates  
c) Nucleic acids  
d) All of them
- (22) Any molecule that induces or elicits an immune response are  
a) Antigens  
b) Antibodies  
c) Epitope  
d) Immunogens
- (23) Which immunoglobulin can pass through placenta?  
a) IgD  
b) IgE  
c) IgM  
d) IgG
- (24) Name the class of immunoglobulin which has a pentameric structure?  
a) IgE  
b) IgG  
c) IgA  
d) IgM
- (25) Which of these immunoglobulins is present in external secretion?  
a) IgG  
b) IgM  
c) IgA  
d) IgE
- (26) Name the class of immunoglobulin which takes part in hypersensitivity reaction?  
a) IgG  
b) IgE  
c) IgA  
d) IgM
- (27) Pollen would most likely evoke which type of hypersensitivity response:  
a) Cytotoxic (Type II)  
b) Immune complex (Type III)  
c) Cell Mediated (Type IV)  
d) Immediate type (Type I)
- (28) Which hypersensitivity reactions are T cell mediated?  
a) Type I  
b) Type II  
c) Type III  
d) Type IV
- (29) Which of the following bind to mast cells and cross-link, resulting in de-granulation and release of histamine?  
a) IgM  
b) IgA  
c) IgG  
d) IgE
- (30) Theoretically, type..... blood can be donated to all persons because it lacks.....  
a) O/antigens  
b) AB/ antibodies  
c) A/ antibodies  
d) O/antibodies
- (31) Type II hypersensitivity is due to:

- a) IgE  
c) IgM
- b) Activation of cytotoxic T cells  
d) Mismatched blood types in transfusion
- (32) Production of auto-antibodies may be due to:
- a) Emergence of mutant clones of B cells  
c) genetic factors
- b) Production of antibodies against sequestered (hidden) tissues  
d) all are possible
- (33) A positive tuberculin test is an example of
- a) Type I hypersensitivity  
c) acute contact dermatitis
- b) Delayed type hypersensitivity  
d) Pollen allergic response
- (34) Rheumatoid arthritis is an .....disease that affects the.....
- a) Allergic/ cartilage  
c) Autoimmune/ joints
- b) Autoimmune/nerves  
d) Immunodeficiency/ muscles
- (35) Contact with poison ivy would elicit which type of hypersensitivity reaction?
- a) type III  
c) type II
- b) type I  
d) type IV
- (36) A tissue graft between two people who are not genetically identical is termed a:
- a) Isograft  
c) Autograft
- b) Xenograft  
d) Allograft
- (37) An example of a type III immune complex disease is:
- a) Contact dermatitis  
c) Serum sickness
- b) Graft rejection  
d) Allergies
- (38) Graft versus host disease results when the recipient lacks or has a poor immune system, and the donor organ and recipient express different:
- a) HLA  
c) Antibodies
- b) T cells  
d) Autoantibodies
- (39) Human immunodeficiency virus (HIV) binds specifically to which immune cell marker?
- a) CD8  
c) CDC
- b) MHC  
d) CD4
- (40) HIV has a high mutation rate due to the imprecise operation of its:
- a) Viral membrane  
c) Reverse transcriptase
- b) CD4 receptor  
d) protease
- (41) Which of the following is considered an autoimmune disease?
- a) rheumatoid arthritis  
c) SCID
- b) AIDS  
d) agammaglobulinemia
- (42) A transplant between individuals of different animal species is termed as:
- a) allograft  
c) endograft
- b) isograft  
d) xenograft
- (43) Vaccine is an example of
- a) naturally acquired active immunity  
c) naturally acquired passive immunity
- b) artificially acquired active immunity  
d) artificially acquired passive immunity

- (44) Often patients are immune to diseases like chicken pox once infected. This immunity is an example of
- a) naturally acquired active immunity                      b) artificially acquired active immunity  
c) naturally acquired passive immunity                      d) artificially acquired passive immunity
- (45) Skin is the largest organ in the body and protects us by preventing pathogen entry. This is an example of
- a) naturally acquired innate immunity                      b) artificially acquired adaptive immunity  
c) naturally acquired passive immunity                      d) artificially acquired passive immunity
- (46) Vaccination was invented by \_\_\_\_\_
- a) Jenner    b) Pasteur  
c) Watson    d) Crick
- (47) For which viral disease, vaccine has been recently developed through the use of tissue culture?
- a) Measles    b) Mumps  
c) Rabies    d) Smallpox
- (48) Virulence can be defined as:
- a) Capacity of a pathogen to cause disease.                      b) Toxicity caused by a parasite.  
c) Ability of an organism to produce toxins.                      d) Ability of an organism to cause latent symptoms
- (49) The major difference between parasite and pathogen is that:
- a) Former is weaker where as latter is stronger in power.                      b) One causes disease and other fails to do so.  
c) One obtains his food only while other causes disease to the host.                      d) One lives inside while other lies outside the body
- (50) Antibody that behaves as enzymes in catalyzing reactions is called:
- a) Isozymes    b) Holozymes  
c) Lipozymes    d) Abzymes
- (51) The basic difference between B and T cell is:
- a) Their origins is different                                      b) The maturation & storage is different  
c) They are found at different places in the lymphoid pool                      d) They do not show any difference
- (52) HIV causes a complete breakdown of immune system by:
- a) Binding to T-cells and destroying them                      b) Binding to B cells and destroying them  
c) Binding to T4 lymphocytes through CD4 antigen and destroying them.                      d) Binding to T8 lymphocytes through CD8 antigen and destroying them.
- (53) MHC-I antigens can only be expressed
- a) in absence of  $\beta 2$  –microglobulin                      b) in presence of  $\beta 2$  –microglobulin  
c) in presence of  $\beta$  chain                                      d) in absence of  $\beta$  chain
- (54) Which is essential for the expression of MHC-I antigens?
- a) Tapasin    b) Invariant chain  
c) Proteasome    d) LMP-2
- (55) Which block the Class II MHC  $\alpha$  and  $\beta$  for binding with endogenous antigen ?

- a) Invariant chain  
c) Proteasome
- b) Cathepsin  
d) none of them
- (56) Class II MHC is involved in antigen presentation to
- a) Cytotoxic T cell  
c) B cell
- b) T helper cell  
d) NK cell
- (57) Peptide- binding cleft or groove of class II MHC molecules is formed by
- a)  $\alpha 1$  and  $\beta 1$  domains  
c)  $\beta 1$  and  $\beta 2$  domains
- b)  $\alpha 1$  and  $\alpha 2$  domains  
d) none of them
- (58) MHC plays important role in all. Except
- a) Tissue transplantation  
c) Antigen presentation
- b) Blood transfusion  
d) T-cell response
- (59) Which mouse does not have thymus and therefore does not have T cells?
- a) Nude  
c) Swiss
- b) C57BL/6  
d) DBA/2
- (60) Hapten conjugated with protein can generate antibodies against
- a) Hapten  
c) Hapten-conjugated protein
- b) Conjugated protein  
d) All are correct