Technical University of Mombasa

Faculty of Applied and Health Sciences

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICAL LABORATORY SCIENCES

BMLS 13M

AML 4304 : IMMUNOPATHOLOGY

SEMESTER EXAMINATION

APRIL 2014 SERIES

2 HOURS

Instructions to candidates:

This paper consists of **TWO** sections **A** and **B**
Section A –Contains MCQS, Answer **ALL** questions in **Section B**.

SECTION A – MCQs – (30marks)

1. Systemic lupus epythematosus may be initiated by which of the following antigens?
   a) Glycoproteins from the cell surface
   b) Glycolipids from the nucleus membrane
   c) Phospholipids from the cell membrane
   d) Glycoproteins for the nucleus
   e) Lipoproteins from streptococcal cell wall that come as a result of infection

2. Which of the following describes the mechanism of graves' disease formation
   a) Antibody inhibits binding of insulin
   b) Antibody inhibits binding of acetylcholine
   c) Antibody stimulates thyroid stimulating hormone receptor
   d) Antibody mediated activation of proteases
   e) Complement and Fc receptor mediated inflammation

3. Good pasture's symdrome is characterized by which of the following clinicopathologic manifestations
   a) Lung hemorrhage
   b) Muscle weakness
   c) Abnormal erythropoiesis
   d) Bullae
   e) Hemolysis

4. Autoimmunity results from failure or breakdown of mechanisms normally responsible for maintaining self tolerance in which of the following cell types?
   a) Basophils
   b) B cells
   c) Macrophages
   d) Eosinophils
   e) Hepatocytes

5. Which of the following best describe a graft transplanted between two genetically identical individuals?
   a) Auto graft
   b) Similograft
   c) Allograft
   d) Syngeneic graft
   e) Xenogeneic graft

6. Which of the following drugs works by blocking lymphocyte precursor proliferation
   a) Azathrioprine
   b) Mycophenolate mofetil
   c) Cyclosporine
   d) CTLA4-Ig
   e) Anti-CD40 lifand

7. Which of the following allergens is more likely to cause allergic rhinitis?
   a) Histamines
   b) House dust mites
   c) Shellfish
   d) Peanuts
   e) Bee venome

8. The following do not change receptors following antigen recognition except
   a) Dendritic cells
   b) B cells
   c) Macrophages
   d) Plasma cells
   e) Basophils

9. The following factors favor tolerance except
   a) High doses of antigens
   b) Prolonged persistence of antigens
   c) Oral entry of antigens
   d) Antigens with adjuvants
   e) Low levels of co-stimulators in the antigen presenting cells

10. T cell tolerance is necessary for maintaining unresponsiveness to which of the following antigens ?
   a) Thymus-dependent antigens
   b) Polysaccharides
   c) Sugars
   d) Lipids
   e) Vitamins

11. In which of the following sites would central tolerance take place
   a) Spleen
   b) Lymph nodes
   c) Bursa of fabricins
   d) Payer's patches
   e) Tonsils

12. Which of the following is not a characteristic of eosinophils
   a) Mature cells have ability to proliferate
   b) It-5 is the major development factor
   c) Clones can survive for days to weeks
   d) Have relatively low levels of FIERT expression
   e) Lycophospholipases are some of the major granule contents

13. Which of the following is not produce by mast cells upon activation as a mediator of hypersensitity reactions
   a) MIP-1$^{\alpha}$
   b) TNF
   c) Prostaglandin D2
   d) IL-5
   e) IL -8

14. Which of the following mediators is toxic to helminthes and bacteria?
   a) Platelet-activating factor
   b) TNF
   c) Leukotrines C4
   d) IL-3
   e) Eosinophile cationic protein

15. Which cell type becomes engorged during the dilation of the wheal to produce a flare?
   a) Macrophoges
   b) Lymphocytes
   c) Platelets
   d) Crythrocytes

e) Splenocytes

16. The full reaction of immediate hypersensitivity takes about
    a) 60 minutes
    b) 30 minutes
    c) 10 minutes
    d) 90 minutes
    e) 150 minutes

17. The finding of which of the following molecules was the first to prove that adaptive immune responses maybe able to control tumors?
    a) TSTA
    b) MCAs
    c) P53 proteins
    d) Ras proteins
    e) MAGE proteins

18. Testis antigens may be expressed in which of the following normal cells/tissues
    a) Trophoblasts
    b) Osteoblasts
    c) Megaloblasts
    d) Connective tissue
    e) Muscle tissue

19. The papillomavirus E6 and E7 proteins are the etiological agents of
    a) nasopharyngeal carcinoma
    b) Prostate cancer
    c) Melanomas
    d) Colorectal cancer
    e) Cervical carcinomas

20. IL-2 administration for tumor therapy may cause which of the following toxicities?
    a) Fatigue
    b) Vascular leakage
    c) Septic shock syndrome
    d) Bone pair
    e) Abnormal river damage

21. T cell deficiency may result in which of the following opportunistic infections/diseases
    a) Otitis
    b) Pneumonia
    c) Fungal infections
    d) Parasitic infections
    e) Osteomyelitis

22. Defective vesicle fusion and lycosomal function in neutrophils may result in which of the following diseases?
    a) Chronic granubamatous disease
    b) Recurrent fungal infections

c) Digeorge's syndrome
d) Chediak-Higashi syndrome
e) Myasthania gravis

23. Which of the following mechanism of defect may result in CVID
a) BtK mutation
b) DNMT3B mutations
c) TACI mutation
d) IgM heavy chain mutations
e) None of the above

24. Decreased phagocytosils of microbes is a mechanism of acquired immunodeficiency caused by
a) Irradiation and chemotherapy treatments
b) Protein calories malnutrition
c) Removal of spleen
d) Depletion of macrophages
e) HIV infection

25. When does the synthesis of mature, infections viral particles in HIV take place?
a) After viral genes are expressed as proteins
b) Before viral genes are expressed to proteins
c) Immediately after infection
d) Soon after formation of the provirus
e) During MRNA transcription

26. Which of the following is reason why naive T cells do not get infected by HIV
a) They lack CEXR4 receptors
b) They lack CCR5 receptors
c) They lack CD4 receptors
d) They have mutations introduced by APOBEC36 enzyme
e) They have CD8+ CD4+ (double positive) expressed receptors that end confusing the virions

27. Antibody responses to a variety of HIV antigens are detectable within which of the following periods after infection?
a) 6 to 9 months
b) 3 to 5 months
c) 12 to 24 months
d) 3 to 5 weeks
e) 6 to 9 weeks

28. Which of the following is tissue specific antigen for liver cancer
a) ¤ -fetoprotein
b) Tyrosinase
c) Gp100
d) Telomerase
e) Carcinoembroyonic antigen

29. Unconjugated mAbs against CD52 may be used for immunotherapy against which of the following cancer?

a) Lung cancer
b) Chronic lymphocytic leukemia
c) Non-Hodgkin's lymphoma
d) Hadgkin's lymphoma
e) Colorectal cancer and head and neck cancer

30. The following cell types may contain variants of antibodies on their surfaces except
a) B cells
b) Mast cells
c) Plasma cells
d) Basophils
e) Eosinophils

SECTION B ESSAY
(ANSWER ALL QUESTION IN THIS SECTION)

1. Give a detailed description of five types of tumor antigens. **(20marks)**

2. (a) Discuss the mechanisms of tissue injury and disease in type II hypersensitivity reactions

(10marks)

(b) Discuss the factors that may lead to autoimmunity **(10marks)**