



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

BMLS

AML 4304 : IMMUNOPATHOLOGY

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2016

TIME: 2 HOURS

DATE: Pick Date Dec 2016

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **TWO** Section(s). Attempt ALL questions.

Circle the correct answer in section A.

Paper 1

Section A

Q1. Which of the following best describes hypersensitivity reactions?

- a) Reactions caused by immune responses to host tissue
- b) Reactions caused by inflammation
- c) Reactions that can result in autoimmunity
- d) Reactions caused by inadequately controlled or inappropriately targeted responses to host tissue
- e) Reactions that lead to transplantation rejection of host tissue

Q2. Which of the following will lead to inflammation?

- a) Unusual persistence of microbes in host tissue
- b) Reactions against intact host tissue
- c) Reactions against microbes
- d) Reactions against inflammation in host tissue
- e) Reactions against tumors

Q3. Which of the following are classes of hypersensitivity disorders?

- a) Class I, II, III, and IV
- b) Grade I, II, III, and IV
- c) Level I, II, III, and IV
- d) HLA I, II, III, and IV
- e) Type I, II, III, and IV

Q4. Which of the following is an example of a T cell mediated disease?

- a) Grave's disease
- b) Myasthenia gravis
- c) Polyarteritis nodosa
- d) Rheumatoid arthritis
- e) Serum sickness

Q5. Which of the following are anti-inflammatory drugs?

- a) Cyclosporine
- b) Methotrexate
- c) Corticosteroids
- d) Plasmapheresis
- e) B7 antagonists

Q6. Which of the following is a characteristic of most allergens?

- a) Exquisite specificity
- b) High solubility in body fluids
- c) Acetylation
- d) Diversity
- e) Methylation

Q7. Which of the following cell types expresses low levels of FcεRI?

- a) M cells
- b) Macrophages
- c) Mast cells
- d) Eosinophils
- e) Basophils

Q8. Which of the following is a major lipid mediator secreted by basophils on activation?

- a) IL-3
- b) Monocyte inflammatory protein 1-α
- c) Prostaglandin D₂
- d) TNF
- e) RANTES

Q9. When a late phase reaction occurs without a detectable preceding immediate phase reaction, the cytokines are majorly produced by which of the following cell types?

- a) T cells
- b) Basophils
- c) Mast cells
- d) Eosinophils
- e) Macrophages

Q10. Peripheral tolerance may be induced in which of the following cell types?

- a) Immature B cells in peripheral organs
- b) Mature T cells in peripheral organs
- c) Immature T cells in peripheral organs
- d) Immature B cells in generative organs
- e) Mature T cells in generative organs

Q11. The most effective way of preventing immune responses to protein antigens is inducing tolerance to which of the following cell types?

- a) CD8+ T cells
- b) B cells
- c) Macrophages
- d) CD4+ T cells
- e) M cells

Q12. Which of the following is not a feature of tumor immunity?

- a) Tumors express antigens that are seen as self by the immune system
- b) Immune responses often fail to prevent the growth of tumors
- c) Not too many antigens may be recognized as non-self
- d) Rapid growth of tumors may overwhelm the immune system
- e) Many tumors can evade the host immune responses

Q13. Affecting cellular proto-oncogenes as a consequence of viral gene insertion can result in which of the following types of tumor antigens?

- a) Oncofetal antigens
- b) Products of mutated genes
- c) Abnormally expressed cellular proteins
- d) Altered glycolipids antigens
- e) Tissue specific differentiation antigens

Q14. Which of the following tumor antigens is normally present in tissue of origin?

- a) Oncofetal antigens
- b) Products of Oncogenic viruses
- c) Prostate-specific antigens
- d) Testis antigens
- e) Alpha-fetoprotein antigens

Q15. Which of the following cytokines increase the tumoricidal capacity of NK cells?

- a) IL-24
- b) IL-21
- c) IL-18
- d) IL-15
- e) IL-12

Q16. Which of the following cell surface molecules are ligands for NKG2D activating receptors for T cells?

- a) MHC-I
- b) MHC-II
- c) MICC
- d) MICB
- e) MHC-III

Q17. Which of the following mechanism is used by macrophages to kill tumor cells?

- a) Scavenging for reactive oxygen species
- b) Release of lysosomal enzymes
- c) Down regulation of TNF production
- d) Down regulation of IFN- γ production
- e) Release of IL-22

Q18. Which of the following are professional antigen presenting cells?

- a) B cells
- b) Cytotoxic T cells
- c) Natural killer cells
- d) Regulatory T cells
- e) Helper T cells

Q20. Which of the following may activate complement to kill tumor cells?

- a) Natural killer cells
- b) TNF
- c) IFN- γ
- d) IgM
- e) CD8+ T cells

Q21. Which of the following is an Autograft?

- a) One transplanted to a host with identical genetic makeup
- b) One transplanted to a host with similar genetic makeup
- c) One transplanted to the same individual
- d) One transplanted to a host of a different species
- e) One transplanted to a host with different genetic makeup

Q22. Which of the following is currently the impediment to transplantation success?

- a) The art of transplanting
- b) Immune responses to the transplant
- c) Lack of donors
- d) Lack of recipients
- e) Lack of animals for organ donation

Q23. Which of the following is responsible for all strong rejections?

- a) Major histocompatibility molecules
- b) Minor histocompatibility molecules
- c) MICA molecules
- d) MICB molecules
- e) None of the above

Q24. Which of the following are antibodies that react with T cell surface structures to deplete or inhibit T cells?

- a) TCR
- b) OKT3
- c) XRT5
- d) CD8
- e) FK506

Q25. Which of the following is not an immunologically privileged site?

- a) Brain
- b) eye
- c) spleen
- d) testis
- e) uterine deciduas

Q26. In immunodeficiencies, the primary abnormality may be in the following except?

- a) Compliment activation Components
- b) macrophage activation
- c) Different stages of lymphocyte maturation
- d) Reponses of mature lymphocytes
- e) None of the above

Q27. Which of the following is not an antibody deficiency disease?

- a) X-linked hyper-IgM syndrome
- b) X-linked agammaglobulinemia
- c) Combined variable immunodeficiency
- d) Wiskott-aldrich syndrome
- e) ICF syndrome

Q28. Which of the following is the aim for treating congenital immunodeficiencies?

- a) Minimize and control infections
- b) Reduce graft versus host reactions
- c) Induce T cell activation
- d) Suppress innate immune responses
- e) Promote blood circulation

Q29. The following are common complications in secondary immunodeficiencies except?

- a) Malnutrition
- b) Neoplasms
- c) Genetic defects
- d) Iatrogenic factors
- e) Infections

Q30. Which of the following is associated with profound immunosuppression with associated opportunistic infections?

- a) Hashimoto's thyroiditis
- b) Non-hodgkins lymphoma
- c) Chronic granulomatous disease
- d) Systemic shock syndrome
- e) Acquired immunodeficiency disease syndrome

Section B

Q31. Discuss the role of infections and other factors in causing autoimmunity (20 marks).

Q32.

- a) Explain five mechanisms by which tumor editing may result in escape of immunosurveillance (10 marks)
- b) Explain mechanisms of stimulating the host immune responses as immunotherapy strategies for tumors (10 marks)