



MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

MAIN CAMPUS

**UNIVERSITY EXAMINATIONS
2023/2024 ACADEMIC YEAR**

SECOND YEAR SECOND SEMESTER EXAMINATIONS

**FOR THE DEGREE
OF
BACHELOR OF SCIENCE PARAMEDICAL SCIENCES
DIRECT ENTRY
MAIN EXAM**

COURSE CODE: NPP 221

COURSE TITLE: GENERAL PATHOLOGY

DATE: 9th April 2024

TIME: 8.00 -11.00 AM

INSTRUCTIONS TO CANDIDATES

This paper is divided into three sections, **A B** and **C**, carrying respectively: Multiple Choice Questions (**MCQs**), Short Answer Questions (**SAQs**) and Long Answer Questions (**LAQs**).

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 4 Printed Pages. Please Turn Over.

SECTION A

Answer All Questions (20 Marks).

1. What is the primary goal of pathology?
 - A) To study the structure of living organisms
 - B) To understand the processes of disease
 - C) To analyze genetic mutations
 - D) To develop new medical treatments
2. Which of the following is NOT a cardinal sign of inflammation?
 - A) Rubor (redness)
 - B) Tumor (swelling)
 - C) Dolor (pain)
 - D) Pallor (pale skin)
3. Which cell type is responsible for initiating the inflammatory response?
 - A) Lymphocytes
 - B) Macrophages
 - C) Fibroblasts
 - D) Neutrophils
4. What is the primary cellular response to injury?
 - A) Apoptosis
 - B) Necrosis
 - C) Inflammation
 - D) Fibrosis
5. Which of the following is a characteristic feature of reversible cellular injury?
 - A) Nuclear fragmentation
 - B) Cellular swelling
 - C) Loss of cell membrane integrity
 - D) Irreversible mitochondrial damage
6. What is the process by which damaged tissue is replaced by scar tissue?
 - A) Regeneration
 - B) Repair
 - C) Fibrosis
 - D) Remodeling
7. Which of the following is NOT a phase of wound healing?
 - A) Hemostasis
 - B) Inflammatory
 - C) Proliferative
 - D) Exudative
8. Which type of collagen is predominant in the early phase of wound healing?
 - A) Type I
 - B) Type II
 - C) Type III
 - D) Type IV
9. Which of the following factors delays wound healing?
 - A) Adequate blood supply
 - B) Infection
 - C) Young age
 - D) Adequate nutrition

10. Which of the following conditions is characterized by impaired wound healing due to abnormal collagen synthesis?
 - A) Marfan syndrome
 - B) Ehlers-Danlos syndrome
 - C) Down syndrome
 - D) Turner syndrome
11. Which of the following is a characteristic feature of edema?
 - A) Increased blood flow to the affected area
 - B) Decreased fluid accumulation in tissues
 - C) Presence of excess interstitial fluid
 - D) Normal tissue hydration levels
12. Hyperemia is best described as:
 - A) A decreased blood flow to tissues
 - B) An abnormal accumulation of blood within vessels
 - C) An active process characterized by increased blood flow
 - D) A passive process caused by impaired venous return
13. Hemorrhage refers to:
 - A) Abnormal accumulation of blood within tissues or organs
 - B) Clot formation within blood vessels
 - C) Excessive fluid accumulation in interstitial spaces
 - D) A decrease in blood volume and pressure
14. Hemostasis is the process of:
 - A) Blood clot dissolution
 - B) Maintaining blood flow through vessels
 - C) Blood clot formation to prevent bleeding
 - D) Increased blood viscosity
15. Thrombosis is characterized by:
 - A) Abnormal bleeding due to platelet deficiency
 - B) Formation of a blood clot within a blood vessel
 - C) Rupture of blood vessels leading to hemorrhage
 - D) Reduced platelet aggregation
16. Embolism occurs when:
 - A) A blood clot forms within a vessel
 - B) A blood vessel ruptures, causing bleeding
 - C) A blood clot travels and lodges in a distant vessel
 - D) Platelets aggregate excessively, leading to thrombus formation
17. Infarction is defined as:
 - A) Formation of a blood clot within a coronary artery
 - B) Death of tissue due to inadequate blood supply
 - C) Accumulation of excess fluid in tissues
 - D) Rupture of blood vessels leading to hemorrhage
18. Genetic diseases caused by mutations are:
 - A) Only observed in somatic cells
 - B) Always inherited from both parents
 - C) Result of alterations in DNA sequence
 - D) Not influenced by environmental factors
19. Mendelian disorders are characterized by:
 - A) Inheritance of multiple genes
 - B) Predictable patterns of inheritance based on single gene mutations

- C) Chromosomal abnormalities
 - D) Onset in adulthood only
20. Multifactorial disorders result from:
- A) Mutation in a single gene
 - B) Interaction of genetic and environmental factors
 - C) X-linked inheritance patterns
 - D) Autosomal recessive mutations exclusively

SECTION B

Answer All Questions (40 Marks).

1. Differentiate between clinical death and biologic death. (5 Marks).
2. Describe different types of cellular adaptation to injury. (5 Marks).
3. Describe the process of acute inflammation. (5 Marks).
4. Explain the concept of wound healing. (5 Marks).
5. Outline three factors that can influence wound healing and explain how each factor impacts the healing process. (5 Marks).
6. Describe the pathophysiology of thrombosis. (5 Marks).
7. State the categories of genetic diseases, providing examples for each category. (5 Marks).
8. Explain the pathophysiology of diabetes mellitus. (5 Marks).

SECTION C

Answer All Questions (40 Marks).

1. a) Explain the pathophysiology of the following hemodynamic disorders: Edema, Hyperemia & congestion, Hemorrhage, and Shock. (8 marks).
 - b) Differentiate between Thrombosis and Embolism. (6 marks).
 - c) Discuss the morphological changes seen in tissues during Infarction. (6 marks).
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2. a) Describe the role of mutations in the development of genetic diseases, and differentiate between the various categories of genetic disorders. (12 marks).
 - b) Explain the concept of Single gene disorders with non-classic inheritance patterns. (8 marks).