



KMTC/QP-08/EPS

**KENYA MEDICAL TRAINING COLLEGE
FACULTY OF CLINICAL SCIENCES
DEPARTMENT OF CLINICAL MEDICINE**

**END OF SEMESTER EXAMINATION
FOR
MARCH 2021 CLASS – YEAR 1 SEMESTER I**

PAPER: GENERAL PATHOLOGY I

DATE: 5th August, 2021

TIME: 2 HOURS (8:00AM – 10:00 AM)

INSTRUCTIONS

1. This paper consists of:
 - Section 1 (20 Multiple Choice Questions)
 - Section 2 (4 Short Answer Questions)
 - Section 3 (2 Long Answer Question)
2. Attempt **ALL** Questions
3. Write your **ADMISSION NUMBER** on all the answer sheets provided and on the question paper.
4. Ensure that all examination answer scripts are handed in at the end of the examination
5. Ensure you sign in the 'sign IN and OUT' examination register provided

EXAMINATION NUMBER

Section 1 (20 Multiple Choice Questions) (20 Marks)

1. Primary etiology of a disease includes all of the following except one. Which one?
 - a. Genetic aberrations
 - b. Fungal infections
 - c. Unknown causation
 - d. Autoimmune
2. Gross morphologic change in a stressed cell may include
 - a. High sodium influx in a cell
 - b. Hypertrophy
 - c. Hypercalcemia
 - d. Microscopic cell injury
3. A 54-year-old with persistent fever, swelling of cervical lymph nodes, night sweats and negative of TB test has been told that one of the nodes has to remove for further investigations. Which of the following procedures best describes the removal of nodes?
 - a. Excisional biopsy
 - b. Incisional biopsy
 - c. Fixation
 - d. Minor surgery
4. In question 3 above, the node has been removed and immediately put in liquid. Which of the following best describes this process?
 - a. Excisional biopsy
 - b. Incisional biopsy
 - c. Fixation
 - d. Minor surgery
5. The following statements explain why the node in question 3 was put in a liquid. Which one is UNTRUE?
 - a. to enhance autolysis
 - b. to coagulate the tissue to prevent loss of easily diffusible substances
 - c. to fortify the tissue against the effects of tissue processing.
 - d. to allow tissue staining
6. In question 4 above, which of the following best describes the liquid used?
 - a. Hematoxylin
 - b. Formaldehyde
 - c. Paraffin
 - d. Normal saline
7. Which of the following organs might need ultrasound guided final needle aspiration?
 - a. Breast
 - b. Thyroid
 - c. Lymph node
 - d. Liver
8. A 21-year-old female student at KMTC presents to the outpatient department at a county teaching and referral hospital with complains of fever, lower abdominal pains and yellow vaginal discharge. Which of the following cytological methods is applicable in examination of the vaginal discharge?
 - a. Exfoliative cytology
 - b. Abrasive cytology
 - c. Biopsy
 - d. Fine needle aspiration cytology

9. While on night shift at a county teaching and referral hospital, a clinical officer is called to certify death of a previous critically ill patient. Which of the following is a sure sign of death?
- Absent pulse
 - No respiratory movements
 - Absent gag reflex
 - Cold body
10. A 45-year-old has been smoking tobacco for the last 12 years, averagely 12 sticks per day. Which of the following best describes the adaptive changes on the bronchial tree epithelial cells?
- Hypertrophy
 - Hyperplasia
 - Atrophy
 - Metaplasia
11. Gloria is a known hypertensive patient on unknown medications for the last 5 years. Today she came to the hospital complaining of chest pains, easy fatigability and coughing. A chest x ray was done and it showed an enlarged heart. Which of the following best explains the enlarged heart?
- Hypertrophy
 - Hyperplasia
 - Atrophy
 - Metaplasia
12. Cardinal signs of inflammation do NOT include which of the following?
- Cyanosis
 - Redness
 - Pain
 - Oedema
13. Which of the following is NOT part of sequence in leukocyte recruitment at the site of injury?
- Margination, adhesion to endothelium and rolling along the vessel wall
 - Firm adhesion to the endothelium
 - Transmigration
 - Immigration of chemotactic cells
14. After extravasating from blood, leukocytes migrate toward sites of infection along a chemical gradient by a process called?
- Margination
 - Chemotaxis
 - Rolling
 - Transmigration
15. Which of the following is NOT a step in phagocytosis?
- Recognition and attachment
 - Engulfment
 - Transmigration
 - Killing and degradation
16. Which of the following mediators of inflammation are preformed?
- Reactive Oxygen species
 - Bradykinin
 - Histamine
 - Nitric Oxide
17. Which of the following mediators are newly synthesized at the site of injury?
- Bradykinin
 - Leukotrienes
 - Serotonin
 - Histamine
18. The principal mediator of increased vascular permeability during acute inflammation is:

- a. Bradykinin
 - b. Prostaglandins
 - c. Histamines
 - d. Integrin
19. The main source of serotonin during acute inflammation is:
- a. Neutrophils
 - b. Mast cells
 - c. Liver
 - d. Platelets
20. Regarding cell injury and death
- a. Initially there is a reduction in cell size during cell necrosis
 - b. Apoptosis is associated with an inflammatory response
 - c. Necrosis results from caspases sequestered in mitochondrial membranes
 - d. Cellular swelling and fatty change indicate reversible cell injury

Section 2 (4 Short Answer Questions) (40 marks)

1. Define the following terms *1) Pathology* (10marks)
2. Explain any five causes of cell injury (any five of the following well explained) *2) Etiology 3) Pathogenesis 4) Pathophysiology* (10marks)
3. Briefly outline 5 physiologic situations in which apoptosis is useful (10marks)
4. Write short notes on (5marks)
- a. Fine needle aspiration cytology (5marks)
 - b. Outline the main applications of cytology

Section 3 (2 Long Answer Question) (40 Marks)

1. Discuss the five (5) types of necrosis (20marks)
2. a). Explain the 5 cardinal signs of inflammation (10marks)
- b). Elucidate stages of Healing by first intension (10marks)