CHUKA  **UNIVERSITY**

UNIVERSITY EXAMINATIONS

SECOND YEAR EXAMINATION FOR THEAWARD OF DEGREE OF BACHELOR OF SCIENCE (NURSING)

NURS 224: HUMAN PATHOLOGY

STREAMS: BSC NURSING (Y2T1) **TIME: 2 HOURS**

DAY/DATE: MONDAY 22/03/2021 **8.30 A.M. – 10. 30 A.M.**

INSTRUCTIONS TO CANDIDATES

- Do not write anything on the question paper.
- Mobile phones and any other reference materials are **NOT** allowed in the examination room.
- The paper has three (3) Sections. **ALL** the questions are compulsory
- Your answers for Section A (MCQs) should be on the first page of the answer Booklet.
- Number ALL your answers and indicate the order of appearance in the space provided in the cover page of the examination answer booklet.

SECTION A: MULTIPLE CHOICE QUESTIONS (20 Marks)

1. During tissue preparation for pathologic examination, paraffin impregnation is done to:
   a) Fix the tissue
   b) Dehydrate the tissue
   c) Make sectioning easier
   d) Enable molten wax embedding
2. Fine needle aspiration is mainly used for :
   a) Superficial lesions
   b) Deep seated lesions
   c) Skin lesions
   d) Bone lesions
3. Necrosis is likely to occur due to:
   a) DNA viral infections
   b) Severe membrane damage
   c) Protein misfoldig syndrome
   d) Activation of death receptors

4. Features of apoptosis include:
   a) Karyolysis
   b) Plasma membrane blebbing
   c) Chromatin condensation
   d) Presence of myelin figures
5. Protein denaturation is prominent in _____necrosis
   a) Caseous
   b) Coagulative
   c) Liquefactive
   d) Fibrinoid
6. Which of the following correctly describes a xanthoma:
   a) Accumulation of triglycerides in the intima of the aorta
   b) Focal accumulation of cholesterol in the lamina propria of gall bladder
   c) Abnormal accumulation of triglycerides within the parenchymal cells of the liver
   d) Accumulation of cholesterol in the subepithelial connective tissue
7. All of the following tissues will mitotically regenerate **EXCEPT**:
   a) Skin
   b) Bone
   c) Muscle
   d) Connective tissue
8. An advantage of wound healing by primary intent include:
   a) Minimization of scar tissue formation
   b) Reduced risk of foreign material being left in the wound
   c) Increased activity of interferons
   d) Reduced risk of anaerobic infection
9. Angiogenesis and fibrosis result from growth factors secreted mainly by:
   a) Macrophage
   b) Neutrophils
   c) Mast
   d) Eosinophil
10. Type of inflammation associated with serous membranes lining rhe peritoneal and pericardial cavity is:
    a) Fibrinous
    b) Serous
    c) Suppurative
    d) Granulomatous
11. During transmigration, the initial rolling is mediated by :
    a) Integrins
    b) Cytokines
    c) Chemokines

d) Selectins

12. Lipoxins counteract an inflammatory response by:
    a) Reducing margination
    b) Increasing the breakdown of other inflammatory mediators
    c) Inhibiting neutrophils adhesion and chemotaxis
    d) Reducing opsonization of offending agents
13. The most reactive free radical principally responsible for damaging cellular components during cell injury is:
    a) Super oxide
    b) Hydrogen peroxide
    c) Carboxyl
    d) Hydroxyl
14. Classic Klinefelter syndrome is associated with:
    a) 47, XXY
    b) 47, XY
    c) 45, XO
    d) 47, iXqY
15. Which of the following does NOT follow classical pattern of inheritance:
    a) Hereditary spherocytosis
    b) Lysosomal storage disease
    c) Leber hereditary optic neuropathy
    d) Chronic granulomatous disease
16. The syndrome that results from genomic imprinting include:
    a) Edward
    b) Down
    c) Klinefelter
    d) Prader-Willi
17. Familial hypercholesterolemia is disorder that results from genetic defects in:
    a) A structural protein
    b) A receptor
    c) An enzyme
    d) A chromosome
18. A malignant tumor of the connective tissue is called a:
    a) Osteoma
    b) Sarcoma
    c) Carcinoma
    d) Papilloma
19. Products of tumor suppressor genes include:
    a) RB protein
    b) Ras protein
    c) MYC oncoproteins

d) Telomerase

20. Malignant tumors contain reactive stroma and cells. common leukocytes associated with malignant tumors include:
    a) Lymphocyte, Neutrophil
    b) Neutrophil, Macrophage
    c) Neutrophil, Eosinophil
    d) Macrophage, Lymphocyte

SECTION B: SHORT ANSWER QUESTIONS (40 Marks)

1. Explain two (2) techniques that can be used in the study of pathology (4 marks)
2. Outline four(4) uses of pathology in diagnosis and treatment of diseases (4 marks)
3. Explain three (3) components of acute inflammation (6 marks)
4. State the four (4) Celsus signs of acute inflammation (4 marks)
5. Describe the maturational phase of wound healing process (6 marks)
6. Explain two (2) components of extracellular matrix (5 marks)
7. Outline five(5) differences between autosomal dominant and sex- linked genetic disorders (5 marks)
8. Explain three(3) types of gene mutations (6 marks)

SECTION C: LONG ANSWER QUESTIONS (40 Marks)

1. Cell injury results when cells are exposed to inherently damaging agents. If the injury is severe, the cell dies either through apoptosis or necrosis.
    a) Describe the mechanisms through which mitochondrial damage causes cell injury (12 marks)
    b) Describe the process apoptosis through the mitochondrial (Intrinsic) pathway 8 marks
2. The process of carcinogesis starts with exposure to carcinogens. The tumor becomes malignant when it metastasizes.
    a) Describe the process of hematogenous tumor metastasis (10 marks)
    b) Explain five (5) effects of tumor (10 marks)
