

CHUKA



UNIVERSITY

**SECOND YEAREXAMINATIONS FOR THE  
BACHELOR OF SCIENCE (NURSING)**

**NURS 224: HUMAN PATHOLOGY**

**STREAMS: Bsc Nursing (Y2T1)**

**TIME: 3 HOURS**

**DAY/DATE:.....**

---

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

20. Malignant tumors contain reactive stroma and cells. common leukocytes associated with malignant tumors include:
- Lymphocyte, Neutrophil
  - Neutrophil, Macrophage
  - Neutrophil, Eosinophil
  - 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 carcinogenesis 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