CHUKA  **UNIVERSITY**

UNIVERSITY EXAMINATION

SECOND YEAR EXAMINATIONS FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN NURSING

NURU 229: HUMAN PATHOLOGY

STREAMS: BSC NURSING UP-GRAD. (Y2T1) **TIME: 2 HOURS**

DAY/DATE: TUESDAY 30/03/2021 **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) Enable molten wax embedding
   b) Fix the tissue
   c) Dehydrate the tissue
   d) Make sectioning easier
2. The most commonly used chemical for decalcifying tissues for pathologic examination is:
   a) Eosin
   b) Chloroform
   c) 10% formalin
   d) Aqueous nitric acid
3. Which of the following statement is true concerning cell adaptation:

a) It is irreversible
b) Results in new altered steady state
c) Occurs after a cell is injured
d) May lead to apoptosis or necrosis

4. The most characteristic feature of apoptosis include:
   a) Karyolysis
   b) Plasma membrane blebbing
   c) Chromatin condensation
   d) Presence of myelin figures
5. Necrosis is likely to occur due to:
   a) DNA viral infections
   b) Severe membrane damage
   c) Protein misfoldig syndrome
   d) Activation of death receptors
6. Impaired blood flow to the brain cells will result in _____necrosis
   a) Liquefactive
   b) Caseous
   c) Coagulative
   d) Fibrinoid
7. Myelin figures in a necrotic cell is composed of:
   a) Proteins
   b) Triglycerides
   c) Cholesterol esters
   d) Phospholipids
8. All of the following tissues will mitotically regenerate **EXCEPT**:
   a) Skin
   b) Bone
   c) Muscle
   d) Connective tissue

9. An advantage of wound healing by primary intent include:
    a) Reduced risk of foreign material being left in the wound
    b) Increased activity of interferons
    c) Reduced risk of anaerobic infection
    d) Minimization of scar tissue formation
10. Angiogenesis and fibrosis result from growth factors secreted mainly by:
    a) Neutrophils
    b) Mast
    c) Macrophages
    d) Eosinophil
11. Type of inflammation associated with blood vessels is:
    a) Serous
    b) Fibrinous
    c) Suppurative
    d) Granulomatous

12. During transmigration, adhesion is mediated by :
    a) Integrins
    b) Cytokines
    c) Chemokines
    d) Selectins
13. Bradykinin:
    a) Is produced through the action of kininase
    b) Requires the activation of complements
    c) Potentiates the effect of lipoxins
    d) Causes vasodilation
14. Hydrogen peroxide is produced in the cells through the action of:
    a) Super oxide dismutase
    b) Catalase
    c) Glutathione peroxidase
    d) NADPH peroxidase

15. Classic Turner syndrome is associated with:
    a) 47, XXY
    b) 45, X0
    c) 47, X0
    d) 47, iXqY
16. 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
17. The syndrome that results from genomic imprinting include:
    a) Edward
    b) Down
    c) Klinefelter
    d) Prader-Willi
18. Familial hypercholesterolemia is a disorder that results from genetic defects in:
    a) A structural protein
    b) An enzyme
    c) A receptor
    d) A chromosome
19. A malignant tumor of a bone is called:
    a) Sarcoma
    b) Osteoma
    c) Carcinoma
    d) Papilloma
20. Products of tumor suppressor genes include:
    a) RB protein
    b) Ras protein
    c) MYC oncoproteins
    d) Telomerase

SECTION B: SHORT ANSWER QUESTIONS (35 Marks)

1. Explain two (2) branches of histopathology indicating the application of each [4 marks]
2. Explain three (3) components of acute inflammation [6 marks]
3. State four (4) features of chronic inflammation [4 marks]
4. Describe the maturational phase of wound healing process [6 marks]
5. Explain two (2) components of extracellular matrix [5 marks]
6. Outline five(5) differences between autosomal dominant and sex- linked genetic disorders [5 marks]
7. State five(5) categories of tumor antigens [5 marks]

SECTION C: LONG ANSWER QUESTIONS (15 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 hypoxia causes cell injury [7 marks]
   b) Describe the process apoptosis through the mitochondrial (Intrinsic) pathway [8 marks]
