CHUKA  **UNIVERSITY**

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN NURSING

NURU 229: HUMAN PATHOLOGY

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

DAY/DATE: TUESDAY 02/11/2021 **11.30 A.M. – 1.30 P.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. The most commonly used decalcifying agent in pathology is:
   a) Hematoxylin
   b) Paraffin
   c) Toluidine blue
   d) Aqueous nitric acid
2. The type of necrosis encountered in acute pancreatitis is:
   a) Fat
   b) Coagulative
   c) Liquefactive
   d) Gangrenous

3. Hypoxia causes cell injury by:
   a) Increasing cytosolic calcium
   b) Inducing protein misfolding syndrome
   c) Depleting cellular ATP levels
   d) Causing plasma membrane damage

4. Production of excessive hormones and growth factors on target cells is likely cause:
   a) Hypertrophy
   b) Hyperplasia
   c) Metaplasia
   d) Dysplasia
5. In the mitochondrion, free oxygen derived radicals are scavenged by:
   a) Superoxide dismutase which converts superoxide into hydrogen peroxide
   b) Glutathione peroxidase which converts hydroxyl radicals into water and oxygen
   c) Catalase which decomposes hydrogen peroxide into water and oxygen
   d) Fenton reaction which converts hydrogen peroxide into hydroxyl radicals
6. Destruction of bone tissue due to tumors of bone marrow is likely to result in:
   a) Metastatic calcification
   b) Fibrinoids
   c) Caseous necrosis
   d) Dystrophic calcification
7. Concerning endothelial cell injury during acute inflammation:
   a) May be long lived.
   b) Occurs in venules only
   c) Induced by VEGF
   d) Associated with late stages of inflammation
8. Lipoxins inhibit inflammation by:
   a) Decreasing vascular permeability
   b) Inhibiting neutrophil adhesion and chemotaxis
   c) Inhibiting tumor necrosis factor(TNF)
   d) Decreasing the production of Leukotrienes
9. Dolor is a common feature in inflammation. It results from liberation of:
   a) Leukotriene B4
   b) Prostaglandins
   c) Substance P
   d) Histamine
10. Migration of Leukocytes through the tissues to the site of infection is most likely mediated by:
   a) Integrins
   b) L-selectin
   c) Complement C3a
   d) Chemokines

11. A growth factor responsible for angiogenesis is:
    a) Vasculoendothelial growth factor(VEGF)
    b) Keratinocyte growth factor(KGF)
    c) Platelet derived growth factor (PDGF)
    d) Tumor necrosis factor (TNF)
12. Connective tissue remodelling involves the activity of Matrix Metallo-Proteinases (MMPs) which are usually inhibited by:
    a) TGF-β
    b) IL -1
    c) TNF
    d) PDGF
13. The role of p53 gene in preventing malignancy include:
    a) Deactivation of growth factor receptors
    b) Activation of apoptosis
    c) Interfering with SMAD molecules
    d) Dissipation of sensors of genomic integrity
14. Immune cells that provide first line of defense against tumor cells is:
    a) Macrophages
    b) Cytotoxic T-Lymphocytes(CTLs)
    c) Natural Killer cells(NK-Cells)
    d) Plasma cells
15. Of the following histopathologic finding, the one that best indicates that a neoplasm is malignant is:
    a) Pleomorphism
    b) Atypia
    c) Necrosis
    d) Invasion
16. Benign tumors that arise from exocrine glands are called:
    a) Adenomas
    b) Adenocarcinomas
    c) Cystadenomas
    d) Papilloma
17. Maternal imprinting of chromosome 15 will result in:
    a) Angelman syndrome
    b) Prader- Willi syndrome
    c) Huntignton disease
    d) Leber hereditary neuropathy
18. Which of the following is true concerning Fragile X syndrome:
    a) Occurs due to single gene deletion
    b) Affects mostly females
    c) Manifests mainly with macro-orchidism
    d) Has a late onset than Huntington disease

19. Aneuploidy karyotype is likely to result from:
    a) Reciprocal translocation between two acrocentric chromosomes
    b) Deletion of both ends of a chromosome with fusion of the damaged ends
    c) Division of the centromere along a transverse plane
    d) Failure of homologous chromosomes or paired chromatids to separate
20. Concerning Turner syndrome:
    a) Has higher prevalence than Klinefelter syndrome
    b) Results mainly from disorder of the X chromosome
    c) Second cause of mental retardation in female
    d) Affected males are usually sterile

SECTION B: SHORT ANSWER QUESTIONS (35 Marks)

1. Describe the process of neutrophil recruitment during an acute inflammatory Response (5 marks)
2. Enumerate the role of the following mediators of inflammation:
    a) Histamine (2 marks)
    b) Bradykinin (3 marks)
3. Indicate five(5) factors that influence wound healing process (5 marks)
4. Outline five(5) differences between autosomal dominant and sex- linked genetic disorders (5 marks)
5. State four(4) consequences of Mendelian genetic disorder (4 marks)
6. Describe the process of carcinogenesis (6 marks)
7. State five(5) categories of tumor antigens (5 marks)

SECTION C: LONG ANSWER QUESTIONS (15 Marks)

1. When a cell is predisposed to certain agents/factors and it can no longer cope, it is likely to get injured.
    a) Discus four (4) possible causes of cell injury giving appropriate example (8 marks)
    b) Describe the process apoptosis through the mitochondrial (Intrinsic) pathway (7 marks)
