CHUKA  **UNIVERSITY**

SECOND YEAR EXAMINATIONS FOR THE

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE (NURSING)

NURU 229: HUMAN PATHOLOGY supplementary/special

STREAMS: Bsc Nursing up-grad. (Y2T1) **TIME: 2 HOURS**

DAY/DATE: WEDNESDAY 11/08/2021 **2.30 P.M. – 4.30 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 3rd step in tissue preparation for pathologic examination is:
   a) 10% formalin fixation
   b) Dehydrating with alcohol
   c) Paraffin impregnation
   d) Clearing with xylene
2. The most commonly used chemical for decalcifying tissues for pathologic examination is:
   a) Eosin
   b) Aqueous nitric acid
   c) Chloroform
   d) 10% formalin
3. Destruction of bone tissue due to tumors of bone marrow is likely to result in:
   a) Metastatic calcification
   b) Fibrinoids
   c) Dystrophic calcification
   d) Cachexia

4. Increased synthesis of cellular proteins is the mechanism of:
   a) Hypertrophy
   b) Metaplasia
   c) Hyperplasia
   d) Dysplasia
5. Apoptosis is encountered in:
   a) Bacterial infection
   b) Severe damage to the mitochondrial membrane
   c) Protein misfolding syndrome
   d) Increased workload
6. The most characteristic feature of apoptosis is:
   a) Mitochondrial swelling
   b) Plasma membrane blebs
   c) Chromatin clumping
   d) Nuclear fragmentation
7. Concerning endothelial cell injury during acute inflammation:
   a) Occurs in venules only
   b) Induced by VEGF
   c) Associated with late stages of inflammation
   d) May be long lived.
8. 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
9. Calor is a common feature in inflammation. It results from liberation of:
   a) Lipoxin
   b) Angiotensin
   c) Histamine
   d) Substance P
10. Migration of Leukocytes through the tissues to the site of infection is most likely mediated by:
    a) Chemokines
    b) Integrins
    c) L-selectin
    d) Complement C3a
11. A common feature of chronic inflammation is tissue injury. It results from:
    a) Reduced blood flow
    b) Reaction oxygen species
    c) Release of vaso-active amines
    d) Arachidonic acid metabolites

12. Connective tissue remodelling involves the activity of Matrix Metallo-Proteinases (MMPs) which are usually inhibited by:
    a) IL -1
    b) TNF
    c) TGF-β
    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 benign is:
    a) Pleomorphism
    b) Atypia
    c) Invasion
    d) Slow rate of growth
16. Benign tumors that arise from exocrine glands are called:
    a) Adenomas
    b) Adenocarcinomas
    c) Cystadenomas
    d) Papilloma
17. Which of the following is correct concerning genetic disorders resulting from mitochondrial gene mutations:
    a) May be transmitted by both parents
    b) Has incomplete penetrance
    c) Affects only sons
    d) Has uniform expressivity
18. Concerning Fragile X syndrome:
    a) Results from missense point mutation
    b) Mutations involves exons
    c) Results in degeneration of caudate nucleus
    d) Affects mainly males
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. Explain three (3) components of acute inflammation [6 marks]
2. Explain three(3) causes of chronic inflammation [6 marks]
3. Describe the inflammation phase of wound healing process [4 marks]
4. Explain two (2) local factors that may hinder would healing [5 marks]
5. Outline five(5) features of autosomal dominant genetic disorders [5 marks]
6. State four(4) consequences of mendelian genetic disorder [4 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) State five (5) causes of cell injury [5 marks]
    b) Describe four(4) types of necrosis indicating mechanism and cause of each [10 marks]
