

NURU 229

CHUKA



UNIVERSITY

**UNIVERSITY EXAMINATION**

**RESIT/SUPPLEMENTARY / SPECIAL EXAMINATIONS EXAMINATION FOR  
THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN NURSING  
(UPGRADING)**

**NURU 229: HUMAN PATHOLOGY**

**STREAMS: BSc. Nursing (upgrading) (Y2S1)**

**TIME: 2 HOURS**

**DAY/DATE: TUESDAY 04/05/2021**

**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. The 4<sup>th</sup> step in tissue preparation for pathologic examination is:
  - a) 10% formalin fixation
  - b) Dehydrating with alcohol
  - c) Paraffin impregnation
  - d) Clearing with xylene
2. Necrosis associated with reduced blood flow to a limb is:
  - a) Caseous
  - b) Coagulative
  - c) Liquefactive
  - d) Gangrenous

3. 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
4. Production of excessive hormones and growth factors on target cells is likely cause:
  - a) Hypertrophy
  - b) Metaplasia
  - c) Hyperplasia
  - d) Dysplasia
5. In the mitochondrial pathway of apoptosis:
  - a) Calcium binds to cytochrome C to activate caspases
  - b) Occur due to severe damage to the mitochondrial membrane
  - c) Involves activation of caspases 3 and 8
  - d) Nuclear breakdown occur due to activation of caspase 6 and 9
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) May be long lived.
  - b) Occurs in venules only
  - c) Induced by VEGF
  - d) Associated with late stages of inflammation
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. Dolor is a common feature in inflammation. It results from liberation of:
- Leukotriene B<sub>4</sub>
  - Prostaglandins
  - Substance P
  - Bradykinin
10. Migration of Leukocytes through the tissues to the site of infection is most likely mediated by:
- Integrins
  - L-selectin
  - Complement C3a
  - Chemokines
11. A common feature of chronic inflammation is tissue injury. It results from:
- Reduced blood flow
  - Reaction oxygen species
  - Release of vaso-active amines
  - Arachidonic acid metabolites
12. Connective tissue remodelling involves the activity of Matrix Metallo-Proteinases (MMPs) which are usually inhibited by:
- TGF- $\beta$
  - IL -1
  - TNF
  - PDGF
13. The role of p53 gene in preventing malignancy include:
- Deactivation of growth factor receptors
  - Activation of apoptosis
  - Interfering with SMAD molecules
  - Dissipation of sensors of genomic integrity
14. Immune cells that provide first line of defense against tumor cells is:
- Macrophages
  - Cytotoxic T-Lymphocytes(CTLs)
  - 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) Invasion
  - d) Necrosis
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) outcomes of acute inflammation (6 marks)
- 3. Describe the inflammation phase of wound healing process (4 marks)
- 4. Explain two (2) components of extracellular matrix (5 marks)
- 5. Outline five(5) differences between autosomal dominant and sex- linked 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) Discuss four (4) possible causes of cell injury giving appropriate example (8 marks)
    - b) Describe the process apoptosis through the mitochondrial (Intrinsic) pathway (7 marks)
- .....