

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**SECOND YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR
OF SCIENCE (NURSING)**

NURU 227: HUMAN PATHOLOGY

STREAMS: BSC NURSING (Y2T1)

TIME: 2 HOURS

DAY/DATE: TUESDAY 06/08/2019

8.30 A.M. – 10.30 A.M.

INSTRUCTIONS:

- **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 sections. ALL the questions are compulsory**
- **Your answers for section A (MCQs) should be done 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. Features of irreversible cell injury include:
 - (a) Chromatin condensation
 - (b) Cell swelling
 - (c) Mitochondria swelling
 - (d) Plasma membrane blebbing

2. After binding to Fas Ligand (CD95L), Fas (CD95) self-associates and activates Fas-associated death domain protein (FADD), which in turn induces apoptosis by stimulating
 - (a) bcl-2
 - (b) Caspase 8
 - (c) Cytochrome a3
 - (d) Cytochrome p450

3. A 49-year-old man develops an acute myocardial infarction because of the sudden occlusion of the left anterior descending coronary artery. The areas of myocardial necrosis within the ventricle can best be described as:
 - (a) Liquefactive necrosis
 - (b) Caseous necrosis
 - (c) Coagulative necrosis
 - (d) Fibrinoid necrosis

4. Cellular and biochemical sites of cell injury include all the following EXCEPT:
 - (a) Mitochondria
 - (b) Lysosome
 - (c) Plasma membrane
 - (d) Nucleus

5. Hypertrophy usually result from:
 - (a) Increased synthesis of cellular protein
 - (b) Proliferation of cells
 - (c) Stem cell reprogramming
 - (d) Protein catabolism

6. During the early stages of the inflammatory response, histamine-induced increased vascular permeability is most likely to occur in
 - (a) Arteries
 - (b) Precapillary arterioles
 - (c) Capillaries
 - (d) Postcapillary venules

7. Which one of the listed statement best describes the process called chemotaxis?
 - (a) Attachment of chemicals to extracellular material to increase phagocytosis
 - (b) Dilation of blood vessels by chemotherapeutic drugs
 - (c) Movement of cell toward a certain site or source
 - (d) Transmigration of cells from blood vessels into tissue

8. Opsonins are proteins that coat microbes making them target for phagocytosis. They include:
 - (a) Thrombin, lectins
 - (b) Antibodies, complements
 - (c) Kinins, antibodies
 - (d) Kinins, lectins

9. The most dominate leucocte in chronic inflammation is:
 - (a) Neutrophil
 - (b) Macrophage
 - (c) Eosinophil
 - (d) Mast cell

10. During acute inflammation, the site is usually red, swollen, hot and painful. The pain results from which of the following mediators:
 - (a) Histamine
 - (b) Reactive oxygen species
 - (c) Prostaglandins
 - (d) Leukotrienes

11. Angiogenesis is a common feature in wound healing. It results from which of the following growth factors:
 - (a) PDGF
 - (b) VEGF
 - (c) FGF-2
 - (d) TNF

12. Which one of the listed processes is the most likely cause of an aneuploidy karyotype?
 - (a) 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

13. The most common cause of Down Syndrome is:
 - (a) Robertsonian translocation
 - (b) Nondisjunction
 - (c) Anaphase lag
 - (d) Mosaicism

14. Most inborn errors of metabolism (IEM) results from which of the following genetic disorder:
 - (a) Autosomal recessive
 - (b) Autosomal dominant
 - (c) Sex-disjunction
 - (d) Non disjunction

15. The most frequently affected organs in hematogenous spread of carcinoma is
 - (a) Liver
 - (b) Brain
 - (c) Lungs
 - (d) Heart

16. The product of the 53 antioncogene is a nuclear protein that regulates DNA replication and prevents the proliferation of cells with damaged DNA by stopping their cell cycle
- (a) Between G1 and S
 - (b) Between G2 and M
 - (c) Between M and G1
 - (d) Between S and G2
17. Which of the following pyrimidine is associated with RNA only:
- (a) Uracil
 - (b) Cytosine
 - (d) Thymine
 - (e) Guanine
18. The most appropriate definition of an adenoma is:
- (a) Benign connective tissue tumour
 - (b) Benign epithelial tumour derived from glandular tissue
 - (c) Benign epithelial tumour derived from a surface
 - (d) Malignant connective tissue tumour
19. Leukocytes that are capable of destroying tumor cells without prior sensitization or activation include:
- (a) T-Lymphocytes
 - (b) Plasma
 - (c) Macrophages
 - (d) NK Cells
20. The most common endocrinopathy in patient with malignant carcinoma is:
- (a) Hyperthyroidism
 - (b) Hypercalcemia
 - (c) Metastasis
 - (d) Cushing syndrome

SECTION B: SHORT ANSWER QUESTIONS (35 MARKS)

1. State four (4) application of pathologic techniques in medical and nursing practice. (4 marks)
2. Describe three (3) ways in which ATP depletion results in cell injury. (6 marks)
3. Describe the three (3) components of acute inflammation. (6 marks)

4. Outline four (4) causes of pathogenic atrophy. (4 marks)
5. State five (5) features of Autosomal recessive genetic disorders. (5 marks)
6. Outline four (4) consequences of Mendelian genetic disorders. (4 marks)
7. Briefly describe the process of carcinogenesis. (6 marks)

SECTION C: LONG ANSWER QUESTION (15 MARKS)

Describe the process of wound healing through secondary union/intention. (15 marks)
