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University Examinations 2024/2025

FOURTH YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICAL MICROBIOLOGY

HMM 3414: GENERAL AND SYSTEMIC PATHOLOGY

DATE: JANUARY 2025

TIME: 3 HOURS

INSTRUCTIONS:

Answer *All* questions

Ensure that all your answers are properly numbered

Part I multiple Choice Questions (MCQ): Write the correct answer on the space provided in the answer booklet. Each MCQ is one mark

Part II: Short Answer Questions – Answer questions following each other on the answer booklet

Part III: Long Answer Questions – Answer each question on the answer booklet

SECTION A: MULTIPLE CHOICE QUESTIONS (20 marks)

1. Which of the following is an example of reversible cell injury?
 - a. Apoptosis
 - b. Necrosis
 - c. Cellular swelling
 - d. Coagulative necrosis
2. What is the primary cause of cell injury in hypoxia?
 - a. Protein denaturation
 - b. ATP depletion
 - c. Free radical formation

- d. Calcium influx
- 3. Which type of necrosis is most commonly associated with tuberculosis?
 - a. Liquefactive necrosis
 - b. Coagulative necrosis
 - c. Fat necrosis
 - d. Caseous necrosis
- 4. Hypertrophy refers to:
 - a. Increase in cell number
 - b. Increase in cell size
 - c. Decrease in cell size
 - d. Decrease in cell number
- 5. What is the most common cause of fatty liver (steatosis)?
 - a. Alcohol consumption
 - b. Viral hepatitis
 - c. Iron overload
 - d. Hypoxia
- 6. Which of the following is a cardinal sign of inflammation?
 - a. Fever
 - b. Redness
 - c. Swelling
 - d. All of the above
- 7. Histamine is primarily released from which cells during inflammation?
 - a. Lymphocytes
 - b. Neutrophils
 - c. Macrophages
 - d. Mast cells
- 8. Which cytokine is mainly responsible for inducing fever during inflammation?
 - a. IL-1
 - b. IL-2

- c. IL-4
 - d. IL-10
9. What type of cells are primarily involved in chronic inflammation?
- a. Neutrophils
 - b. Eosinophils
 - c. Macrophages and lymphocytes
 - d. Platelets
10. Which of the following is not a component of the acute inflammatory response?
- a. Increased vascular permeability
 - b. Leukocyte migration
 - c. Fibrosis
 - d. Vasodilation
11. Which type of edema is typically caused by left-sided heart failure?
- a. Peripheral edema
 - b. Pulmonary edema
 - c. Cerebral edema
 - d. Ascites
12. What is a thrombus?
- a. A blood clot within a blood vessel
 - b. A solid mass of cells in tissues
 - c. A collection of white blood cells
 - d. A localized collection of pus
13. Which of the following is not a predisposing factor for deep vein thrombosis (DVT)?
- a. Prolonged immobility
 - b. Pregnancy
 - c. Low blood pressure
 - d. Oral contraceptive use
14. Which of the following terms describes the accumulation of fluid in the peritoneal cavity?
- a. Ascites

- b. Pleural effusion
 - c. Anasarca
 - d. Edema
15. Which of the following is a major risk factor for atherosclerosis?
- a. High LDL cholesterol
 - b. Low HDL cholesterol
 - c. Hypertension
 - d. All of the above
16. Which of the following is a characteristic of benign tumors?
- a. Invasive growth
 - b. Rapid mitotic rate
 - c. Encapsulated
 - d. Metastasis
17. What term describes the ability of cancer cells to spread to distant organs?
- a. Hypertrophy
 - b. Hyperplasia
 - c. Metastasis
 - d. Dysplasia
18. Carcinomas arise from which type of tissue?
- a. Connective tissue
 - b. Epithelial tissue
 - c. Nervous tissue
 - d. Muscle tissue
19. Which of the following genes is commonly known as a tumor suppressor gene?
- a. Ras
 - b. p53
 - c. Myc
 - d. Bcl-2

20. What is the most common cancer in men worldwide?

- a. Lung cancer
- b. Prostate cancer
- c. Colorectal cancer
- d. Liver cancer

SECTION B: SHORT ANSWER ALL QUESTIONS (40 MARKS)

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| 1. Describe the process of inflammation and its cardinal signs. | 6mks |
| 2. Discuss the mechanisms of tissue repair and the differences between primary and secondary intention healing | 6mks |
| 3. Describe the causes of Cell Injury | 6mks |
| 4. Describe three classification of Amyloidosis | 6mks |
| 5. Describe mechanism of apoptosis | 6mks |
| 6. Describe mechanisms of Water Homeostasis | 4mks |

SECTION C: LONG ANSWER TWO QUESTIONS (40 MARKS)

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| 1. Discuss the Morphological Types of Necrosis | 12mks |
| 2. Discuss the mechanisms of Necrosis | 8mks |
| 3. Discuss Systemic Effects of Inflammation | 10mks |
| 4. Explain 5 Clinical Presentations of Acute Inflammation | 10mks |
| 5. Tabulate the comparisons between benign and malignant tumors. | 20mks |