



**AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF MEDICAL SCIENCE
DEPARTMENT OF REHABILITATION MEDICINE
BACHELOR OF SCIENCE IN PHYSIOTHERAPY
END OF SEPT-DECEMBER 2024 TRIMESTER EXAMINATIONS**

UNIT CODE: PHT 223 UNIT NAME: Systematic pathology

DATE: Wednesday/ 4th/ December

TIME: TWO HOURS

START: 11.15AM STOP : 1.15PM

INSTRUCTIONS (physical exams)

Do not write on this question paper

(Marks and questions distribution as per program curriculum.)

1. This exam is marked out of 70 marks
2. This Examination comprises 3 Sections
3. This exam shall take 2 Hours

SECTION I: MULTIPLE CHOICE QUESTIONS. ANSWER ALL QUESTION (20 MARKS)

1. In a 60 year old male, Gangrene of toes is most likely associated with:-
 - a. Diabetes Mellitus
 - b. Heart Failure
 - c. Blunt force trauma
 - d. Type III hypersensitivity reaction

2. The most likely pathologic alteration following occlusion of the left middle cerebral artery by a sterile thrombus:-
 - a. Cerebral softening from liquefactive necrosis
 - b. Pale infarction with coagulative necrosis
 - c. Recovery of damaged neurons if the vascular supply is re-established
 - d. Wet gangrene with secondary bacterial infection

3. A type of necrosis most commonly associated with ischemic injury:-
 - a. Coagulation Necrosis
 - b. Liquefaction Necrosis
 - c. Caseous Necrosis
 - d. Gangrenous Necrosis

4. A most likely pathology in the brain following a stroke with loss of blood supply to lobes:-
 - a. Cerebral softening from liquefactive necrosis
 - b. Pale infarction with coagulative necrosis
 - c. Predominantly the loss of glial cells
 - d. Wet gangrene with secondary bacterial infection

5. The best example of Dystrophic Calcification is seen in a:-
 - a. 55 year old woman with metastases from breast carcinoma & hypercalcemia
 - b. Healing granuloma in a 41 year old man with pulmonary tuberculosis
 - c. Gangrenous lower extremity in a 50 year old woman with diabetes mellitus
 - d. 62 year old woman with a recent cerebral infarction

6. The presence of differentiated columnar epithelium with goblet cells in lower esophagus is consistent with:-
 - a. Dysplasia
 - b. Hyperplasia
 - c. Ischemia
 - d. Metaplasia

7. A situation that is most likely to give rise to Metaplasia:-
 - a. Lactation following pregnancy
 - b. Vitamin A deficiency
 - c. Acute Myocardial Infarction
 - d. Acute Tubular Necrosis

8. A deposit in myocardium in advanced age:-
 - a. Hemosiderin
 - b. Lipochrome
 - c. Glycogen
 - d. Cholesterol

9. An amputated foot of a diabetic will most likely show:-
 - a. Neoplasia
 - b. Gangrenous Necrosis
 - c. Coagulopathy
 - d. Hemosiderosis

10. Hypertensive Enlargement of the heart is a form of:-
 - a. Fatty infiltration
 - b. Glycogen storage
 - c. Hypertrophy
 - d. Hyperplasia

11. Focal Fat Necrosis is associated with:-
 - a. Fibrinous Pericarditis
 - b. Chronic Appendicitis
 - c. Acute Pancreatitis
 - d. Periportal Fibrosis

12. Neurogenic, Septic and Cardiogenic shock are all characterized by:-
 - a. Equal prognosis if untreated
 - b. Need for blood transfusion
 - c. Peripheral vasodilation at onset
 - d. Normal blood volume at early stage

13. A type of shock mostly associated with severe burns:-
 - a. Cardiogenic shock
 - b. Hypovolemic shock
 - c. Septic shock
 - d. Neurogenic shock

14. Fat emboli can be precipitated by:-
 - a. Excessive fats intake
 - b. Rupture of an atheromatous plaque
 - c. Rupture of the uterus
 - d. Fracture of the femur

15. Infarction of the spleen is usually due to:-
- Hypersplenism
 - Congestion
 - Deposition of connective tissue and pigment
 - Venous Thrombosis
16. Asthma is an example of:-
- Type I hypersensitivity reaction
 - Type II hypersensitivity reaction
 - Type III hypersensitivity reaction
 - Type IV hypersensitivity reaction
17. An infectious agent associated with transformation of tissue macrophages to epithelioid cells:-
- Mycobacterium leprae
 - Pseudomonas aeruginosa
 - Cytomegalovirus
 - Giardia Lamblia
18. A cell type that releases chemical mediators responsible for allergic rhinitis:-
- Neutrophils
 - Mast Cells
 - CD4+ Cells
 - Macrophages
19. A predictor of a better prognosis for breast cancer:-
- The tumor is small in size
 - No metastasis are found in sampled lymph node
 - Numerous mitosis are seen
 - Tumor shows mild hyperchromatism
20. Acute Pulmonary edema of the heart failure results from:-
- Increased Plasma Colloid Osmotic Pressure
 - Decreased Plasma Colloid Osmotic Pressure
 - Increased Vascular Permeability
 - Increased Vascular Hydrostatic Pressure
21. A type of inflammation most characteristic of acute rheumatic fever:-
- Myocarditis
 - Pancarditis
 - Pericarditis
 - Endocarditis

22. A lymph node biopsy revealed a diagnosis of tuberculosis. The type of necrosis characteristic with this biopsy would possibly be:-
- Coagulative necrosis
 - Liquefactive necrosis
 - Caseous necrosis
 - Gangrenous necrosis
23. Excess growth hormone in adults causes:-
- Gigantism
 - Acromegaly
 - Dwarfism
 - Has no effects
24. Diabetes Insipidus is caused by:-
- Excessive antidiuretic hormone
 - Deficient antidiuretic hormone
 - Excessive insulin
 - Deficient insulin
25. A clinical sign in Addison's disease:-
- Weight gain
 - Hyperglycemia
 - Hyperpigmentation
 - Hypertension
26. A complication of cardiogenic shock:-
- Acute tubular necrosis
 - Nodular glomerulosclerosis
 - Renal vein thrombosis
 - Chronic polynephritis
27. A hormone secreting tumor:-
- Carcinoma of the cervix uteri
 - Fibro adenoma of the breast
 - Bronchogenic carcinoma
 - Carcinoma of the pancreas
28. The most significant indicator of malignancy:-
- Hyperchromatism
 - Metastasis
 - Increased mitotic activity
 - Pleomorphism

29. A possible complication of myocardial infarction:-

- a. Calcific aortic valve stenosis
- b. Constrictive pericarditis
- c. Endocardial fibroelastosis
- d. Septal hypertrophy

30. The correct statement about stem cells:-

- a. They are found in the basal layer of the skin
- b. Their proliferation of self-initiation
- c. They are capable of self-renewal
- d. They are resistant to ionizing radiation

SECTION II: SHORT ANSWER QUESTIONS

(20 MARKS)

1. Describe the pathogenesis of obstructive lung disease (5 marks)
2. Outline the mechanisms involved in the development of atherosclerosis (5 marks)
3. State FIVE possible causes of pituitary hormone secretion failure (5 marks)
4. Neurons are sensitive to damage by a wide variety of agents. State FIVE agents associated with nerve injury (5 marks)

SECTION III: LONG ANSWER QUESTIONS

(20 MARKS)

Instructions: Answer question ONE then choose another one question between 2 and 3 below.

1. Osteoporosis is a bone disease that develops when bone minerals density and bone mass decreases. Describe the characteristics of this pathology in relation to its clinical effects (10 marks)
2. Describe the etiology and pathogenesis of increased intracranial pressure (10 marks)
3. Glomerular damage results n reduction in urinary output, proteinuria and hematuria.
 - a. Describe the mechanisms underlying these changes (6 marks)
 - b. State FOUR main clinical syndromes commonly seen in these pathological changes (4 marks)