

NATIONAL UNIVERSITY OF LESOTHO
FACULTY OF HEALTH SCIENCES
BSC. NURSING EXAMINATION
NRS 3301: PATHOPHYSIOLOGY

JANUARY 2024

MARKS: 100

TIME: 3 HOURS

INSTRUCTIONS:

- 1. This paper consists of 11 pages including cover page.**
- 2. Answer all questions.**
- 3. Answer each question on a new page.**
- 4. Number your answers correctly**
- 5. Write legibly.**
- 6. Figures in brackets indicate marks allocated for each question**

SECTION A

QUESTION 1 MULTIPLE CHOICE QUESTIONS

Select the correct answer for each of the following questions. For example; 1. G

- 1.1 An objective indication of disease that is obvious to an observer is referred to as a:
- a) Suffering
 - b) Sign
 - c) Syndrome
 - d) Symptom
- 1.2 What is a term that is used to refer to the clinical evidence or effects of the disease?
- a) Indication
 - b) Manifestations
 - c) Causal factors
 - d) Outward appearance
- 1.3 Which of the following is an example of a local manifestation?
- a) Fever
 - b) Lethargy
 - c) Redness
 - d) General body aches
- 1.4 Tendencies that promote the development of disease are referred to as:
- a) Causal factors
 - b) Stressors
 - c) Infectious agents
 - d) Risk factors
- 1.5 Tell the name of a disease that develops gradually and stays for a long period of time.
- a) Acute
 - b) Infectious
 - c) Communicable
 - d) Chronic
- 1.6 What happens to the healing process when host defenses are overwhelmed by infectious agents?

- a) The inflammatory response is shortened and does not complete destruction of the invading organisms.
- b) Fibroblast production becomes malignant due to hypersensitization by invading organisms.
- c) The formation of granulation tissue is impaired.
- d) Collagen fibers cannot draw tissues together.

1.7 What may be reasons that there is excessive antidiuretic hormone (ADH) secretion in the body?

- a) Excessive sleeping combined with irregular eating
- b) Antipsychotic medications and smoking
- c) Increased need in the aquaporin channel and coffee drinking
- d) Antipsychotic medications and coffee drinking

1.8 Two types of obesity are recognized: upper body obesity and lower body obesity. How is the type of obesity determined?

- a) Waist/hip circumference
- b) Chest circumference/weight
- c) Chest/hip circumference
- d) Waist circumference/weight

1.9 In the adult population, what means of controlling binge eating is most prevalent in men?

- a) Self-induced vomiting
- b) Compulsive exercise
- c) Laxative use
- d) Compulsive working

1.10 The immune system typically responds to invaders of all types in our bodies. However, it can also cause tissue injury and disease. What is this effect called?

- a) Hypersensitivity action
- b) Antigen reaction
- c) Mediator response action
- d) Allergen stimulating reaction

1.11 Many adaptive cellular responses alter the expression of “differentiation” genes. What can cells do because of this?

- a) A cell is able to change size or form without compromising its normal function.
- b) A cell incorporates its change in function and passes this change on to other cells like it.
- c) A cell is able to pass its change on to a “housekeeping” cell.
- d) A cell dies once the stimulus to change has been removed.

- 1.12 A man presents to the emergency room after being out in below zero weather all night. He asks the nurse why the health care team is concerned about his toes and feet. How would the nurse respond?
- a) Cold causes injury to the cells in the body by injuring the blood vessels, making them leak into the surrounding tissue.
 - b) After being out in the cold all night, his toes and feet are frozen, and it will be very painful to warm them again; in addition, the health care team is concerned that he might be a drug addict.
 - c) “It is obvious that you are a homeless person, and we were wondering how often this has happened to you before and when it will happen again.”
 - d) “Your toes and feet are frozen, and there is a concern about the formation of blood clots as we warm them again.”
- 1.13 Which cells are responsible for the specificity and memory of adaptive immunity?
- a) Phagocytes
 - b) T lymphocytes
 - c) Dendritic cells
 - d) Natural killer cells
- 1.14 The body regulates the pH of its fluids by what mechanism?
- a) Liver
 - b) Lungs
 - c) Cardiovascular system
 - d) Endocrine system
- 1.15 Which of the following is a phase of wound healing?
- a) Activation
 - b) Nutritional
 - c) Maturation
 - d) Healing
- 1.16 Gastroesophageal reflux is a common comorbidity of hiatal hernia, and when this occurs, what might the hernia do?
- a) Increase esophageal acid clearance
 - b) Retard esophageal acid clearance
 - c) Decrease esophageal acid clearance
 - d) Accelerate esophageal acid clearance

- 1.17 A 39-year-old Caucasian woman presents at the clinic with complaints of epigastric pain that is cramplike, rhythmic, and just below the xiphoid. She states that it wakes her up around 1AM and that she is not sleeping well because of it. She further states that this is her third painful episode in the past year. The nurse suspects the patient has a peptic ulcer and expects to receive what orders from the physician?
- Schedule patient for a complete metabolic panel and a complete blood count
 - Schedule patient for laparoscopic examination
 - Schedule patient for a swallow study
 - Schedule patient for a lower gastrointestinal study
- 1.18 Diverticulitis is often asymptomatic, but when symptoms do occur, what is the patient's most common complaint?
- Lower left quadrant pain with nausea and vomiting
 - Right lower quadrant pain with nausea and vomiting
 - Midepigastric pain with nausea and vomiting
 - Right lower quadrant pain with rebound
- 1.19 Celiac disease commonly presents in infancy as failure to thrive. It is an inappropriate Tcell-mediated immune response, and there is no cure for it. What is the treatment of choice for celiac disease?
- Removal of protein from the diet
 - Removal of fat from the diet
 - Removal of gluten from the diet
 - Removal of sugar from the diet
- 1.20 Gallstones are made up mostly of cholesterol. What is believed to be a precursor of gallstones?
- Gallbladder sludge
 - Thinned mucoprotein
 - Pieces of hard food trapped in the gallbladder
 - Thickened bile
- 1.21 When the glucocorticoid hormones remain elevated for extended periods of time what can occur?
- Hepatomegaly
 - Portal hypertension
 - Hyperglycemia
 - Adrenal hyperplasia
- 1.22 What fetal abnormalities are associated with Gestational diabetes mellitus (GDM)?

- a) Microsomia and polycythemia
- b) Macrosomia and hypocalcemia
- c) Hypercalcemia and hyperbilirubinemia
- d) Hypoglycemia and hypercalcemia

1.23 What are the most common causes of epididymitis in young men without underlying genitourinary disease?

- a) *Chlamydia trachomatis* and *Candida albicans*
- b) *Chlamydia trachomatis* and *Neisseria gonorrhoeae*
- c) *Escherichia coli* and *Neisseria gonorrhoeae*
- d) *Candida albicans* and *Escherichia coli*

1.24 What are risk factors for endometriosis?

- a) Late menarche and regular periods with longer cycles than 27 days
- b) Early menarche and lighter flow
- c) Increased menstrual pain and periods of shorter than 7 days
- d) Periods longer than 7 days and increased menstrual pain

1.25 Which of the following statements describe unstable angina?

- a) Chest pain due to a coronary artery spasm
- b) Chest pain occurring while at rest
- c) Pain triggered by activity
- d) Mechanical compression of the heart

1.26 What sequence does the blood flow?

- a) Left atrium, left ventricle, lungs, right atrium, right ventricle
- b) Left ventricle, left atrium, lungs, right atrium, right ventricle
- c) Right atrium, right ventricle, lungs, left atrium, left ventricle
- d) Right ventricle, right atrium, lungs, left atrium, left ventricle

1.27 What can be done to ease the pain of acute pericarditis?

- a) Have patient sit up and lean forward
- b) Have patient change positions to unaffected side
- c) Have patient breath deeply
- d) Have patient swallow slowly and frequently

1.28 Which of the following causes a Distributive shock?

- a) Excessive vasodilation with maldistribution of blood flow
- b) Alteration in cardiac function
- c) A decrease in blood volume

- d) Obstruction of blood flow through the circulatory system
- 1.29 Which of the following is a sign of heart failure?
- a) Ruddy complexion
 - b) Fluid retention
 - c) Bradycardia
 - d) Chronic productive cough
- 1.30 What is the primary physiologic result of obstructive shock?
- a) Left ventricular hypertrophy
 - b) Elevated right heart pressure
 - c) Right atrial hypertrophy
 - d) Decreased right heart pressure
- 1.31 Which of the following statements describes unprovoked seizures?
- a) No identifiable cause can be determined.
 - b) Most common major motor seizure
 - c) Motion takes the form of automatisms such as lip-smacking
 - d) These seizures also are known as drop attacks
- 1.32 Where do overuse injuries commonly occur?
- a) Knee
 - b) Wrist
 - c) Neck
 - d) Fingers
- 1.33 Which statement describes a sprain?
- a) An injury in which the skin is torn or its continuity is disrupted
 - b) The ligaments may be incompletely torn or completely torn or ruptured
 - c) A stretching injury caused by mechanical overloading
 - d) Displacement or separation of the bone ends of a joint with loss of articulation
- 1.34 The rate of movement between intravascular compartment and extravascular compartment is influenced by;
- a) oncotic pressure
 - b) hydrostatic pressure
 - c) colloid osmotic pressure
 - d) capillary dynamics
- 1.35 Increased intra-abdominal fluid occurs when;

- a) the liver fails to synthesis albumin
 - b) the liver has excessive fat around hepatocytes
 - c) the liver no longer produces adequate enzymes for body functions
 - d) hepatic artery is obstructed
- 1.36 Which stage of shock is typical of rising levels of acid in the body fluids due to metabolic malfunction?
- a) Initial
 - b) Compensatory
 - c) Progressive
 - d) Refractory
- 1.37 Shock resulting from widespread dilation of veins such that there is insufficient blood to fill them is called;
- a) cardiogenic
 - b) hypovolemic
 - c) anaphylactic
 - d) septic
- 1.38 During acute organ dysfunction, kidneys respond by producing scanty, very concentrated urine with high specific gravity and osmolarity due to;
- a) inadequate blood supply to the kidney
 - b) inadequate fluid intake
 - c) microcirculatory disorder
 - d) ineffective glomerular filtration
- 1.39 What symptom is believed to have a strong association to ovarian cancer?
- a) increased intestinal gas
 - b) increased appetite
 - c) abdominal or pelvic pain
 - d) fatigue
- 1.40 Which of the following is a cause of vaginal infections in premenarchal girls?
- a) Poor hygiene
 - b) Vaginal deodorants
 - c) Tampon
 - d) Nylon underwear

(40Marks)

QUESTION 2**MATCHING**

Match the following skin conditions in column I with their definitions in column II. E.g. 1. K

COLUMN I	COLUMN II
2.1 Vitiligo	A. Sudden appearance of white patches on the skin
2.2 Ecthyma	B. Ulcerative form of impetigo
2.3 Tinea capitis	C. Erythema (flushing and redness) on the central face and across the cheeks, nose, or forehead
2.4 Verrucae	D. Benign papillomas caused by the DNA containing human papillomavirus
2.5 Acne vulgaris	E. Comedones form primarily on the face and neck and, to a lesser extent, on the back, chest, and shoulders
2.6 Acne conglobata	F. Comedones, papules, pustules, nodules, abscesses, cysts, and scars occur on the back, buttocks, and chest
2.7 Rosacea	G. Ringworm of the scalp
2.8 Nevi	H. Mole
2.9 Albinism	I. A genetic disorder in which there is complete or partial congenital absence of pigment in the skin, hair, and eyes; it is found in all races.
2.10 Psoriasis	J. Characterized with raised erythematous plaques with silvery scales

(10Marks)

QUESTION 3

TRUE or FALSE

State whether the following statements are TRUE or FALSE. E.g 1. T for TRUE statement or 1. F for FALSE statement. DO NOT re-write the whole statement.

- 3.1 Water losses that occur through the skin and lungs are referred to as insensible water losses because they occur without a person's awareness.
- 3.2 The renin-angiotensin-aldosterone system exerts its action through angiotensin II and aldosterone.
- 3.3 Hypokalemia represents a plasma sodium concentration of less than 135 mEq/L.
- 3.4 Genetic disorders arise in two ways: inherited from parents or spontaneous due to an acquired mutation.
- 3.5 Someone who carries a gene responsible for a disease but who does not manifest the disease is said to be a carrier.
- 3.6 The process of cell division results in cellular differentiation.
- 3.7 Proliferation is the process of specialization whereby new cells acquire the structure and function of the cells they replace.
- 3.8 Malignant neoplasms are less well differentiated and have the ability to break loose, enter the circulatory or lymphatic systems.
- 3.9 Iron deficiency anemia results from dietary deficiency, loss of iron through bleeding, or increased demands.
- 3.10 Jaundice in infants is the result of increased red blood cell breakdown and the inability of the immature liver conjugate to bilirubin.

(10Marks)

SECTION B

QUESTION 4

ESSAY QUESTIONS

- 4.1 Explain any two cellular responses to stress (4marks)
- 4.2 Differentiate between benign and malignant neoplasms. (4marks)
- 4.3 Describe three mechanisms leading to cell injury. (12marks)
- 4.5 Describe any five ways in which the body initially defends itself against pathogens. (10marks)
- 4.5 Explain how lifestyle is associated with development of primary hypertension. Consider any 5 factors. (10marks)
- (40Marks)**

THE END