

**FACULTY OF HEALTH SCIENCES
DEPARTMENT OF NURSING SCIENCE**



<u>PROGRAMME</u>	: B CUR
<u>SUBJECT</u>	: NURSING SCIENCE 1A: MEDICAL AND SURGICAL NURSING MODULE 1: HAEMOPOIETIC SYSTEM AND ONCOLOGY MODULE 2: CARDIOVASCULAR SYSTEM AND ENDOCRINOLOGY
<u>CODE</u>	: VPK1A10
<u>DATE</u>	: WINTER EXAMINATION MAY/JUNE 2016
<u>DURATION</u>	: 3 HOURS
<u>WEIGHT</u>	: 50:50
<u>TOTAL MARKS</u>	: 100 MARKS
<u>EXAMINERS</u>	: MISS A BEZUIDENHOUT
<u>MODERATORS (INTERNAL)</u>	: MRS IJ KEARNS : PROF WE NEL
<u>NUMBER OF PAGES</u>	: THIS PAPER CONSISTS OF ELEVEN (11) PAGES

<u>INSTRUCTIONS</u>	: QUESTION PAPERS MUST BE HANDED IN
<u>REQUIREMENTS</u>	: 2 BOOKS PER CANDIDATE

INSTRUCTIONS TO CANDIDATES:

PLEASE ANSWER ALL THE QUESTIONS. (½ mark per fact unless stated otherwise).
PLEASE ANSWER MODULE 1 AND 2 IN DIFFERENT BOOKS.
PLEASE HAND IN EXAMINATION PAPER

QUESTION 1

Select the best response for each item. For example: 1.1. A

There is only one correct answer.

- 1.1. Changes in cardiac structure associated with aging would include all of the following **except:**
- a. Elongation of the aorta.
 - b. Endocardial fibrosis.
 - c. Increased sensitivity to baroreceptors.
 - d. The increased size of the left atrium. (1)
- 1.2. Post-catheterization nursing measures for a patient who has had a cardiac angiogram, include:
- a. Assessing the peripheral pulses in the affected extremity.
 - b. Checking the insertion site for hematoma formation.
 - c. Evaluating temperature and colour in the affected extremity.
 - d. All of the above. (1)
- 1.3. When assessing vital signs in a patient with a permanent pacemaker, the nurse needs to know the:
- a. Date and time of insertion.
 - b. Location of the generator.
 - c. Model number.
 - d. Pacer rate. (1)
- 1.4. The pain of angina pectoris is produced primarily by:
- a. Coronary vasoconstriction.
 - b. Movement of thromboemboli.
 - c. Myocardial ischemia.
 - d. The presence of atheromas. (1)
- 1.5. Which of the following statements about myocardial infarction pain is **incorrect?**
- a. It is relieved by rest and inactivity.
 - b. It is substernal in location.
 - c. It is sudden in onset and prolonged in duration.
 - d. It is tight and constricting and radiates to the shoulders and arms. (1)

- 1.6. The causative microorganism for rheumatic endocarditis can be accurately identified only by:
- a. A throat culture.
 - b. An echocardiogram.
 - c. A chest x-ray.
 - d. Serum analysis. (1)
- 1.7. The most characteristic symptom of pericarditis is:
- a. Dyspnoea.
 - b. Constant chest pain.
 - c. Fatigue lasting more than 1 month.
 - d. Uncontrolled restlessness. (1)
- 1.8. Diabetes insipidus is a disorder related to a deficiency of:
- a. Growth hormone.
 - b. Prolactin.
 - c. Oxytocin.
 - d. Vasopressin. (1)
- 1.9. A Pheochromocytoma is an adrenal medulla tumour that causes arterial hypertension by increasing the level of circulating:
- a. Catecholamines.
 - b. Enzymes.
 - c. Hormones.
 - d. Glucocorticoids. (1)
- 1.10. The pathophysiology of hypoparathyroidism is associated with all of the following **except:**
- a. A decrease in serum calcium.
 - b. An elevation of blood phosphate.
 - c. An increase in the renal excretion of phosphate.
 - d. A lowered renal excretion of calcium. (1)

*[10]

QUESTION 2

Georgia, a 36-year-old woman, is diagnosed as having primary hypertension after three blood pressure recordings show her average reading to be 195/100 mm Hg. After lifestyle modification had no effect on her elevated blood pressure, she was started on anti-hypertensive treatment which does not seem to be reducing her blood pressure either. She is admitted in the hospital for blood pressure monitoring and medical management. She presents with the following clinical data

Subjective data as verbalised by the patient on admission in the unit:

- She verbalises that she was first diagnosed with hypertension 6 months ago.
- She verbalises that most days she forgets to take her treatment as she does not like taking medication.
- She verbalises that she enjoys eating out and does not particularly like cooking.
- Patient smokes about 20 cigarettes per day.
- She does little to no exercise.
- She consumes alcohol socially.
- Both her parents and her brother has hypertension.

Main complaints by the patient:

- Severe headache.
- Dizziness and palpitations.
- Epistaxis.
- Intermittent chest pain.

Objective data obtained through physical examination

Vital data:

- Blood pressure : 195/100mmHG
- Heart rate : 95 bpm
- Respiration : 22 bpm
- Temperature : 36.2 °C
- Weight : 85 Kg
- Length : 1.62 m

Diagnostic results:

- Total Cholesterol : elevated
- Triglycerides : elevated
- Urinalysis : Protein +++

Prescribed Treatment:

- Hydrochlorothiazide : 12.5mg daily PO
- Coversyl : 4mg daily PO

Please answer the following questions with regards to the afore mentioned scenario.

- 2.1. Explain the underlying pathophysiological reason for the clinical data that Georgia is presenting with. (7)
- 2.2. Identify the risk factors of hypertension that Georgia presents with. (5)
- 2.3. Critically discuss the health education with reference to lifestyle modification and medication control that you would give to the patient. Give a rationale for each of the health education aspects. (10)
- 2.4. List the complications of uncontrolled hypertension for Georgia. (3)

***[25]**

QUESTION 3

David is a 56-year-old construction worker. He has been admitted in the hospital and is diagnosed with diabetes mellitus. He presents with the following clinical data:

Vital data:

Blood pressure	:	148/96 mmHG
Heart rate	:	89 bpm
Temperature	:	37.6°C
Respiration	:	23 bpm
Blood glucose	:	14.3 mmol/L

Physical examination:

Weight : 92 Kg
 Height : 1.65 m

Wound on lower left leg about 5 cm in size, oozing puss (patient verbalize he hurt himself 2 weeks back but the wound does not want to heal, it just gets worse), with a foul smell.

He consumes about 3-4 L of water and urinates excessively.

He verbalizes that he is never able to satisfy his hunger.

He is always tired and is struggling with blurred vision.

He has lost about 8 Kg in the last 2 months.

Biochemical data:

Urinalysis : presence of ketones and glucose.

Please answer the following questions with regards to the aforementioned scenario:

- 3.1. Define the term diabetes mellitus. (1)
- 3.2. Define the term glycaemic index. (1)
- 3.3. Explain the underlying pathophysiological reason for the clinical data that David presents with. (7)
- 3.4. Formulate two (2) nursing diagnosis for David, based on the clinical data that he presents with. (6x½)=(3)
- 3.5. For each diagnosis mentioned, describe four (4) specific nursing actions with a rational for each. (8)
- 3.6. You have to give health education to David before he is discharged. Give comprehensive health education to David, covering the following aspects: diet, exercise, self-monitoring, foot care, medication compliance. (15)

***[35]**

7/...

QUESTION 4

Answer the following questions based on the case scenarios.

Select the best response for each item. For example: 4.1.1. A

There is only one correct answer.

4.1. Ermelina, a 64-year-old retired secretary, is admitted to the medical–surgical area for management of chest pain caused by angina pectoris.

4.1.1. The nurse knows that the basic cause of angina pectoris is believed to be:

- a. Dysrhythmias triggered by stress.
- b. Insufficient coronary blood flow.
- c. Minute emboli discharged through the narrowed lumens of the coronary vessels.
- d. Spasms of the vessel walls owing to excessive secretion of epinephrine(adrenaline).

(1)

4.1.2. The medical record lists a probable diagnosis of chronic stable angina. The nurse knows that Ermelina's pain:

- a. Has increased progressively in frequency and duration.
- b. Is incapacitating.
- c. Is relieved by rest and is predictable.
- d. Usually occurs at night and may be relieved by sitting upright.

(1)

4.1.3. Ermelina has nitro-glycerine at her bedside to take PRN. The nurse knows that nitro-glycerine acts in all of the following ways except:

- a. Causing venous pooling throughout the body.
- b. Constricting arterioles to lessen peripheral blood flow.
- c. Dilating the coronary arteries to increase the oxygen supply.
- d. Lowering systemic blood pressure.

(1)

- 4.1.4. Ermelina took a nitro-glycerine tablet at 10:00 AM, after her morning care. It did not relieve her pain, so, 5 minutes later, she repeated the dose. Ten minutes later and still in pain, she calls the nurse, who should:
- Administer a PRN dose of diazepam (Valium), try to calm her, and recommend that she rest in a chair with her legs dependent to encourage venous pooling.
 - Assist her to the supine position, give her oxygen at 6 L/min, and advise her to rest in bed.
 - Help her to a comfortable position, give her oxygen at 2 L/min, and call her physician.
 - Suggest that she take double her previous dose after 5 minutes and try to sleep to decrease her body's need for oxygen.
- (1)

- 4.2. Mr. Lillis, a 46-year-old bricklayer, is brought to the emergency department by ambulance with a suspected diagnosis of myocardial infarction. He appears ashen, is diaphoretic and tachycardiac, and has severe chest pain. The nursing diagnosis is decreased cardiac output, related to decreased myocardial tissue perfusion.

- 4.2.1. The nurse knows that the most critical time period for his diagnosis is:
- The first hour after symptoms begin.
 - Within 24 hours after the onset of symptoms.
 - Within the first 48 hours after the attack.
 - Between the third and fifth day after the attack.
- (1)

- 4.2.2. Because the area of infarction develops over minutes to hours, the nurse knows to interpret the following ECG results as indicative of initial myocardial injury:
- Abnormal Q waves.
 - Enlarged T wave.
 - Inverted T wave.
 - ST segment depression.
- (1)

- 4.2.3. The nurse evaluates a series of laboratory tests within the first few hours. She knows that a positive indicator of cell damage is:
- Decreased level of troponin.
 - Elevated creatine kinase (CK-MB).
 - Lower level of myoglobin.
 - All of the above.
- (1)

4.2.4. The nurse needs to look for symptoms associated with one of the major causes of sudden death during the first 48 hours, which is:

- a. cardiogenic shock.
- b. pulmonary oedema.
- c. pulmonary embolism.
- d. ventricular rupture.

(1)

4.2.5. For discharge planning, Mr. Lillis is advised to:

- a. avoid large meals.
- b. exercise daily.
- c. restrict caffeine-containing beverages.
- d. do all of the above.

(1)

*[9]

QUESTION 5

Match column A with column B. Example 5.1. A

There is only one correct answer per function.

Column A	Column B
5.1. Glucagon	a. Controls excretion of water by the kidneys.
5.2. Aldosterone	b. Lowers blood sugar.
5.3. Oxytocin	c. Inhibits bone resorption.
5.4. Somatotropin	d. Influences metabolism that is essential for normal growth.
5.5. Vasopressin	e. Supports sexual maturation.
5.6. Calcitonin	f. Promotes the secretion of milk.
5.7. Prolactin	g. Stimulates the reabsorption of sodium and the elimination of potassium.
5.8. Melatonin	h. Promotes glycogenolysis.
5.9. Parathormone	i. Increases the force of uterine contractions during parturition.
5.10. Insulin	j. Regulates serum calcium.

*[10]

10/...

QUESTION 6

Answer the following questions based on the case scenarios.

Select the best response for each item. For example: 6.1.1. A

There is only one correct answer.

6.1. Connie had been hospitalized for 1 week for studies to confirm a diagnosis of primary hypothyroidism.

6.1.1. Several tests were used in Connie's assessment. All of the following results are consistent with her diagnosis of hypothyroidism except for:

- a. an increased level of thyrotropin (TSH).
- b. a low uptake of radioactive iodine (¹³¹I).
- c. a protein-bound iodine reading of 3 mg/dL.
- d. a T3 uptake value of 45%.

(1)

6.1.2. Nursing care for Connie includes assessing for clinical manifestations associated with hypothyroidism. A manifestation not consistent with her diagnosis is a:

- a. change in her menstrual pattern.
- b. pulse rate of 58 bpm.
- c. temperature of 95.88°F.
- d. weight loss of 10 lb over a 2-week period.

(1)

6.1.3. The principal objective of medical management is to:

- a. irradiate the gland in an attempt to stimulate hormonal secretion.
- b. replace the missing hormone.
- c. remove the diseased gland.
- d. withhold exogenous iodine to create a negative feedback response, which will force the gland to secrete hormones.

(1)

6.1.4. Nursing comfort measures for Connie should include:

- a. encouraging frequent periods of rest throughout the day.
- b. offering her additional blankets to help prevent chilling.
- c. using a cleansing lotion instead of soap for her skin.
- d. all of the above.

(1)

6.1.5. Health teaching for Connie includes making sure that she knows that iodine based chemotherapy is:

- a. administered intravenously for 1 week so that her symptoms may be rapidly put into remission.
- b. needed for life.
- c. recommended for 1 to 3 months.
- d. used until her symptoms disappear.

(1)

6.2. Fill in the blank spaces, by indicating the number and the correct answer on your answer sheet.

Over secretion of adrenocorticotrophic hormone (ACTH) or the growth hormone results in

6.2.1. _____ disease.

A deficiency of ADH or vasopressin can result in the disorder known as

6.2.2. _____, which is characterized by

6.2.3. _____ and

6.2.4. _____.

The most common type of hyperthyroidism is 6.2.5. _____.

Hyperthyroidism is second only to 6.2.6. _____ as a common endocrine disorder.

(6)

*[11]

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