UGANDA NURSES AND MIDWIVES EXAMINATIONS BOARD

Diploma in Nursing (Extension) - Paper Code: DNE 112

Medical Nursing III

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Duration: 3 Hours

SECTION A: OBJECTIVE QUESTIONS — 20 MARKS

1. Which of the following condition does NOT cause blood in urine?

(a) Kidney stones.

(b) Hydronephrosis. ✓

(c) Glomerulonephritis.

(d) Obstruction of the ureters.

Explanation: Kidney stones physically tear the mucosal lining, while Glomerulonephritis is an active inflammation making capillaries leak red blood cells. *Hydronephrosis* is simply the structural swelling/dilation of the renal pelvis due to fluid backup; unless complicated by a stone or tumor, the dilation itself does not inherently cause bleeding.

2. The most accurate method of detecting glucose in urine is

(a) using boiling method.

(b) culture and sensitively.

(c) using a uristic. ✓

(d) microscopic examination of urine.

Explanation: Using a Uristix (urine dipstick) is highly accurate for glucose because the reagent pad utilizes a specific enzymatic reaction (glucose oxidase) that reacts *only* to glucose. Boiling methods (like Benedict's test) are less accurate as they react to all reducing sugars (lactose, fructose), not just glucose.

3. Which of the following conditions cause formation of Ketone bodies in urine?

(a) Uncontrolled diabetes mellitus. ✓

(b) Obstruction of the urinary bladder.

(c) Prostate cancer.

(d) Kidney infections.

Explanation: In uncontrolled diabetes mellitus, the body cannot utilize glucose due to a lack of insulin. To survive, the body begins rapidly breaking down fats for energy. The toxic byproducts of this massive fat metabolism are acidic ketone bodies, which spill into the urine (Ketonuria) and cause Diabetic Ketoacidosis.

4. In patients with acute nephrotic syndrome, diuretics are given to

(a) reduce the high blood pressure.

(b) help the kidneys excrete excess salt and water. ✓

(c) help the kidneys to function normally.

(d) help the kidneys to excrete toxic substance.

Explanation: Nephrotic syndrome leads to massive protein loss, which drops intravascular oncotic pressure and causes severe, generalized fluid retention (anasarca). Diuretics (like Furosemide) are administered to aggressively force the kidneys to excrete this trapped excess salt and water, reducing the dangerous edema.

5. The most common immediate complication of gonococcal urethritis is

(a) urethral abscess. ✓

(b) urethral structure.

(c) urethral diverticula.

(d) urethral fistula.

Explanation: An acute, *immediate* complication of an untreated gonorrheal infection in the urethra is the rapid formation of a painful periurethral abscess as the bacteria invade localized glands. Urethral "structure" (stricture) is a chronic, late-stage complication resulting from long-term scarring.

6. Asking the patient to tell how he/she feels on this day and usually other days is assessing

(a) attention.

(b) insight.

(c) mood. ✓

(d) immediate recall.

Explanation: In a mental status examination, asking a patient to describe their sustained internal emotional state over time (how they feel today and generally on other days) is the clinical method for assessing their *Mood*. (Affect is what the nurse visibly observes; Mood is what the patient subjectively reports).

7. Pain caused by an abnormality anywhere in a nerve pathway is referred to as

(a) phantom.

(b) psychological.

(c) chronic.

(d) neuropathic. ✓

Explanation: Neuropathic pain arises directly from a lesion, disease, or abnormality affecting the somatosensory nervous system itself. It is frequently described by patients as a severe burning, shooting, or electric-shock-like sensation.

8. The sleep disturbance in which someone feels as if they have had insufficient sleep when they awaken is

(a) insomnia. ✓

(b) hypersomia.

(c) parasomia.

(d) narcolopsy.

Explanation: Insomnia is not just the inability to fall asleep; it is clinically defined by poor sleep quality, frequent awakenings, or "non-restorative sleep" where the individual wakes up feeling exhausted as if they had insufficient rest.

9. An involuntary shaking movement in a rhythmic manner produced when muscles repeatedly contract and relax is

(a) tremor. ✓

(b) athetosis.

(c) cramps.

(d) chorea.

Explanation: A *tremor* is the medical definition for a rhythmic, involuntary, oscillatory movement of a body part (like the hands in Parkinson's disease), generated by the alternating contractions of opposing muscle groups.

10. Which of the following is NOT a sensory symptom presented by a patient with multiple sclerosis?

(a) Muscle weakness. ✓

(b) Numbness.

(c) Lack of sensation in the vagina.

(d) Difficult to reach organism. (orgasm)

Explanation: Multiple Sclerosis causes a wide array of neurological deficits. However, *muscle weakness* is strictly classified as a **motor** symptom resulting from damage to descending motor tracts. Numbness and loss of sexual sensation are true sensory deficits.

11. Damage to a single peripheral nerve is termed as

(a) peripheral neuropathy.

(b) mono-neuropathy. ✓

(c) multiple mono-neuropathy.

(d) poly neuropathy.

Explanation: The prefix "mono-" means one. A *mononeuropathy* is localized damage to one specific peripheral nerve (for example, compression of the median nerve causing Carpal Tunnel Syndrome). Polyneuropathy affects many nerves systemically (like in diabetic neuropathy).

12. Tremors in a patient with Parkinson's disease is increased by

(a) inadequate sleep.

(b) anxiety and emotional stress. ✓

(c) emotional stress and fatique.

(d) anxiety and fatique.

Explanation: Parkinsonian resting tremors are highly sensitive to the patient's emotional state. Any surge in adrenaline from anxiety, fear, or severe emotional stress drastically exacerbates the amplitude and severity of the tremors.

13. Which of the following is NOT a motor symptom experienced by a patient with multiple sclerosis?

(a) dizziness. ✓

(b) unsteadiness.

(c) constipation.

(d) difficult in walking.

Explanation: Dizziness (vertigo) is categorized as a vestibular/sensory symptom resulting from demyelination in the brainstem or cerebellum. Difficult walking and unsteadiness are motor/ataxic symptoms, while constipation relates to autonomic smooth muscle motor dysfunction.

14. Which of the following symptoms should a nurse find in a patient diagnosed with gout?

(a) Involvement of single joint.

(b) Appearance of tophi on elbows and feet. ✓

(c) Appearance of rheumatic nodules on elbow.

(d) Appearance of Bouchard's nodules.

Explanation: Chronic gout is characterized by the accumulation of sharp, chalky monosodium urate crystals under the skin. These hard, visible deposits are called *tophi* and classically appear on the joints of the feet (especially the big toe) and elbows.

15. The most common site for inter-vertebral disc prolapsed is

(a) L1 - L2 and L2 - L3.

(b) L4 - L5 and L5 - S1. ✓

(c) C5 - C6 and C6 - C7.

(d) C3 - C4 and C4 - C5.

Explanation: The lower lumbar spine carries the absolute heaviest mechanical load and bears the massive sheer forces generated during lifting and bending. Thus, the discs between L4-L5 and L5-S1 are statistically the most frequently herniated or prolapsed.

16. Which of the following persons is at the greatest risk of developing lower back pains?

(a) A 60-year-old clerk who walks regularly.

(b) A 25-year-old lady who weighs 45 kgs.

(c) A long distance bus driver.

(d) A 30-year old nurse who works in critical care unit. ✓

Explanation: In occupational health, Critical Care Nurses face an extraordinarily high risk of lower back injuries due to the repetitive, heavy lifting, turning, and transferring of completely immobilized, dependent adult patients. (Long-distance drivers are also high-risk, but nursing is frequently highlighted as the apex occupational hazard for MSK injuries).

17. During assessment of a 65-year-old lady, observation of a severely increased thoracic curve or hump back in an indication of

(a) Lordosis.

(b) Kyphosis. ✓

(c) Scoliosis.

(d) Ankylosis.

Explanation: *Kyphosis* is an exaggerated, forward-rounding curvature of the thoracic spine, leading to a "humpback" appearance. In elderly women, it is a very common complication of severe osteoporosis causing wedge fractures of the thoracic vertebrae.

18. While obtaining subjective data related to the musculoskeletal system, which of the following information is least important?

(a) Life style data.

(b) Past health history.

(c) Family history.

(d) Vital signs. ✓

Explanation: Vital signs (blood pressure, heart rate, temperature) are strictly *objective* clinical data measured directly by the nurse. Subjective data refers exclusively to information the patient verbally reports about their history, pain, lifestyle, and symptoms.

19. Which of the following should a nurse base on to diagnose osteoarthritis?

(a) Fever and malaise.

(b) Tender swollen joints.

(c) Morning stiffness which resolves in 30 minutes. ✓

(d) Morning stiffness lasting more than an hour.

Explanation: A key differential diagnostic feature of Osteoarthritis (a mechanical "wear and tear" disease) is that morning joint stiffness is brief, typically resolving within 30 minutes of waking. In contrast, Rheumatoid Arthritis (an autoimmune disease) causes severe stiffness lasting longer than 1 hour.

20. **Which of the following is a common cause of prerenal acute renal failure?**

(a) Glycosuria.

(b) Myoglobinuria.

(c) Enlarged prostate gland.

(d) Atherosclerosis. ✓

Explanation: "Prerenal" kidney failure is caused by severely decreased blood flow *before* the blood even reaches the kidneys. Severe atherosclerosis (such as bilateral renal artery stenosis) physically blocks blood flow, causing the kidneys to fail from chronic ischemia and hypoperfusion. (Enlarged prostate is a *post-renal* cause).

SECTION A: FILL IN THE BLANK SPACES — 10 MARKS

21. The most significant sign of Addison's disease is:
HYPERPIGMENTATION (BRONZING OF SKIN)

22. A condition that is caused by hyper-secretion of adrenocorticotrophic hormone is termed as:
CUSHING'S DISEASE (OR SYNDROME)

23. 90% of urinary stones are made of:
CALCIUM (CALCIUM OXALATE)

24. A nurse understands that urine flows through a Foley's catheter by the principle of:
GRAVITY

25. Drooping eyelid (Ptosis) is a disorder of cranial nerve:
III (OCULOMOTOR NERVE)

26. The part of the brain responsible for co-ordination of movement is the:
CEREBELLUM

27. The cranial nerve that is responsible for hearing and maintaining balance is:
VIII (VESTIBULOCOCHLEAR NERVE)

28. A condition in which excessive uric acid builds up and is deposited in the joints is:
GOUT / GOUTY ARTHRITIS

29. In a patient with rheumatoid arthritis, heat or hot applications may help to reduce:
JOINT STIFFNESS / PAIN

30. A butterfly rash is a classic symptom of:
SYSTEMIC LUPUS ERYTHEMATOSUS (SLE)

SECTION B: SHORT ESSAY QUESTIONS — 10 MARKS

Question 31: Causes of Acromegaly (5 Marks)

Outline five (5) causes or risk factors of acromegaly:

- **Pituitary Adenoma:** A benign, slow-growing tumor on the anterior pituitary gland that autonomously secretes massive, unregulated amounts of Growth Hormone (GH) (accounts for over 95% of cases).
- **Hypothalamic Tumors:** Tumors in the hypothalamus that overproduce Growth Hormone-Releasing Hormone (GHRH), which heavily overstimulates the normal pituitary gland.
- **Ectopic Tumors:** Non-endocrine cancers, such as small cell lung carcinomas or pancreatic neuroendocrine tumors, that bizarrely mutate and begin secreting their own ectopic GHRH or GH into the blood.
- **Multiple Endocrine Neoplasia Type 1 (MEN 1):** A hereditary, genetic syndrome that predisposes the patient to develop multiple tumors across the endocrine system, frequently including GH-secreting pituitary tumors.
- **McCune-Albright Syndrome:** A rare genetic mutation affecting cellular signaling that causes severe bone abnormalities and can trigger hypersecretion of pituitary growth hormones.

Question 32: Trigeminal Neuralgia (5 Marks)

Outline five (5) signs and symptoms of trigeminal neuralgia:

- **Electric-Shock Pain:** Sudden, severe, excruciating stabs of pain that feel like agonizing electrical shocks striking the face.
- **Unilateral Presentation:** The pain is almost exclusively confined to one side of the face at a time, strictly following the branches of the 5th cranial nerve.
- **Trigger Zones:** The severe pain attacks are easily provoked by trivial sensory stimuli, such as a light breeze, brushing teeth, eating, or lightly touching the cheek.
- **Brief Episodes:** The intense pain attacks are paroxysmal, lasting anywhere from a few agonizing seconds to a couple of minutes before suddenly stopping.
- **Tic Douloureux (Facial Spasm):** The extreme severity of the pain causes the patient to involuntarily wince, twitch, or grimace heavily during an attack.

SECTION C: LONG ESSAY QUESTIONS 60 MARKS

Question 33: Peripheral Neuropathy & Parkinson's Disease (20 Marks)

(a) State five (5) causes of peripheral neuropathy (5 marks):

- **Diabetes Mellitus:** Chronically high blood sugars cause severe microvascular damage, starving peripheral nerves of oxygen (Diabetic Neuropathy).
- **Chronic Alcoholism:** Alcohol is directly toxic to nerve tissue, and alcoholics often suffer from severe Vitamin B1/B12 deficiencies which are vital for nerve health.
- **Infectious Diseases:** Viral and bacterial infections such as HIV, Leprosy, Lyme disease, and Syphilis can actively invade and destroy peripheral nerves.
- **Autoimmune Disorders:** Conditions like Guillain-Barré syndrome, Rheumatoid Arthritis, or Lupus where the immune system aggressively attacks the nerve's myelin sheath.
- **Toxic Exposure / Medications:** Prolonged exposure to heavy metals (lead, mercury) or the use of highly toxic neuro-chemotherapy drugs.

(b) Outline ten (10) signs and symptoms of neuropathies (10 marks):

- Numbness or total loss of sensation.
- "Pins and needles" tingling (paresthesia).
- Severe burning or freezing neuropathic pain.
- Extreme sensitivity to light touch (hyperesthesia).
- Progressive muscle weakness in affected limbs.
- Loss of deep tendon reflexes.
- Loss of balance and coordination (loss of proprioception).
- Noticeable muscle wasting / atrophy.
- Orthostatic hypotension (dizziness when standing).
- Anhidrosis (inability to sweat normally).

(c) Outline five (5) complications of Parkinson's disease (5 marks):

- **Aspiration Pneumonia:** Advanced disease severely paralyzes swallowing muscles, causing food/saliva to enter the lungs, frequently leading to fatal infections.
- **Severe Traumatic Injuries:** Extreme postural instability and freezing of gait inevitably result in frequent, devastating falls causing hip fractures or traumatic brain injuries.
- **Parkinson's Disease Dementia:** As neurodegeneration spreads to the cortex, patients suffer from profound cognitive decline, memory loss, and vivid visual hallucinations.
- **Psychiatric Distress:** The massive depletion of brain dopamine frequently triggers severe, treatment-resistant clinical depression and crippling anxiety.
- **Pressure Ulcers:** As the disease progresses to the terminal phase, complete immobility traps the patient in bed, leading to severe, infected pressure sores.

Question 34: Ankylosing Spondylitis & Osteoporosis (20 Marks)

(a) Give five (5) signs and symptoms of ankylosing spondylitis (5 marks):

- Chronic, severe pain deep in the lower back and buttocks (sacroiliitis) that typically starts insidiously before the age of 40.
- Severe early morning spinal stiffness that uniquely improves significantly with physical activity but worsens with rest.
- Progressive loss of spinal flexibility, ultimately causing the spine to fuse completely rigid (bamboo spine).
- Severe postural changes, specifically a pronounced forward-stooped, hunched posture (hyperkyphosis).
- Restricted chest expansion and pleuritic chest pain due to inflammation fusing the costovertebral (rib to spine) joints.

(b) Outline the management of a patient with osteoporosis (10 marks):

- **Pharmacotherapy:** Administer Bisphosphonates (like Alendronate) to strongly inhibit osteoclast activity and halt further bone breakdown.
- **Nutritional Support:** Ensure high dietary intake of Calcium and Vitamin D, prescribing aggressive oral supplements to provide the raw materials needed for bone remineralization.
- **Physical Therapy:** Strictly encourage weight-bearing exercises (like walking or light jogging) which mechanically stimulate osteoblasts to build new, denser bone tissue.
- **Hormonal Therapy:** In postmenopausal women, utilize Hormone Replacement Therapy (HRT) or Selective Estrogen Receptor Modulators (SERMs) to replace the bone-protecting effects of lost estrogen.
- **Fall Prevention Strategies:** Aggressively modify the patient's living environment by removing trip hazards, installing grab bars, and correcting vision issues to prevent devastating hip or spine fractures.

(c) Outline the health education a nurse should give to a patient to relieve lower back pain (5 marks):

- **Ergonomic Body Mechanics:** Teach the patient to always bend at the knees and hips, keeping the back completely straight when lifting objects, and to avoid violently twisting the spine.
- **Posture Correction:** Instruct the patient to sit in firm chairs with excellent lumbar support and avoid deep, soft couches that force the spine into an unnatural slump.
- **Weight Management:** Educate the patient on the critical need to lose excess abdominal weight, as a heavy "gut" pulls the pelvis forward, massively increasing mechanical strain on the lower back.
- **Therapeutic Exercises:** Provide demonstrations on daily core-strengthening and gentle hamstring-stretching exercises to build a muscular "internal corset" that supports the lumbar vertebrae.
- **Heat/Cold Application:** Advise the patient to apply ice packs during acute, sudden flare-ups to numb pain, and to use warm compresses or hot showers for chronic, stiff, aching muscles.

Question 35: Cushing's Syndrome & Hypothyroidism (20 Marks)

(a) Outline ten (10) signs and symptoms of Cushing's syndrome (5 marks):

- "Moon face" (rounded, puffy facial fat).
- "Buffalo hump" (fat pad on the upper back).
- Severe truncal (central) obesity.
- Thin, fragile, paper-like skin.
- Large purple striae (stretch marks) on abdomen.
- Severe muscle weakness and wasting of limbs.
- Hirsutism (excess facial hair in women).
- Hypertension (due to sodium retention).
- Hyperglycemia (steroid-induced diabetes).
- Easy bruising and incredibly slow wound healing.

(b) Formulate five (5) Nursing diagnoses of a patient with Cushing's syndrome (5 marks):

- **Fluid Volume Excess** related to extreme sodium and water retention secondary to glucocorticoid excess.
- **Risk for Infection** related to the severe immunosuppressive and anti-inflammatory effects of massive cortisol levels.
- **Impaired Skin Integrity** related to protein wasting causing thinning skin, capillary fragility, and delayed wound healing.
- **Risk for Injury (Fractures)** related to steroid-induced osteoporosis and profound skeletal muscle weakness.
- **Disturbed Body Image** related to rapid, disfiguring physical changes including moon face, truncal obesity, and prominent purple striae.

(c) Outline the Nursing management of a patient with hypothyroidism, till discharge (10 marks):

- **Medication Compliance:** Administer prescribed Levothyroxine exactly on schedule on an empty stomach. Educate the patient that this is a lifelong daily commitment and must not be stopped when symptoms improve.
- **Temperature Control:** Provide a warm, draft-free environment with extra blankets to combat severe cold intolerance, strictly avoiding the use of hot water bottles which could burn their desensitized skin.
- **Cardiovascular Monitoring:** Continuously monitor ECG, heart rate, and blood pressure to detect dangerous bradycardia, hypotension, or signs of heart failure due to a sluggish metabolism.
- **Nutritional Management:** Provide a low-calorie diet to help the patient shed the excess weight gained during the hypometabolic state.
- **Bowel Regulation:** Ensure a high-fiber diet, push adequate oral fluids, and administer prescribed stool softeners to aggressively prevent severe constipation and paralytic ileus.
- **Skin Care:** Apply rich, moisturizing emollients daily to treat the characteristically dry, coarse, and flaky skin, preventing severe cracking and subsequent infection.
- **Neurological Observation:** Check the patient's level of consciousness frequently to ensure they are not slipping into a fatal, hypothermic Myxedema Coma.
- **Activity Pacing:** Group nursing procedures together to allow for extended rest periods, as the patient suffers from profound, debilitating exhaustion.
- **Medication Safety Alert:** Strictly monitor the use of any sedatives or narcotics, as the patient's sluggish metabolism makes them incredibly sensitive to respiratory depression from these drugs.
- **Discharge Education:** Teach the patient and family the signs of both continued hypothyroidism

(lethargy, cold) and hyperthyroidism (palpitations, sweating from medication overdose) to report to the doctor.

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