AMREF INTERNATIONAL UNIVERSITY

DEPARTMENT OF NURSING AND MIDWIFERY SCIENCES

KENYA REGISTERED COMMUNITY HEALTH NURSING

END OF SEMESTER EXAMINATIONS

DNS 315: Medical Surgical Nursing III

DATE: FRIDAY 10TH APRIL 2026

TIME: 2 HOURS **Start:** 11.15 HOURS **Finish:** 13.15 HOURS

INSTRUCTIONS

1. This exam will be marked **out of 70 Marks**
2. ALL Questions are compulsory.
3. The Examination has Three Sections: Section I- Multiple Choice Questions, Section II: Short Answer Questions, Section II: Long Essay Questions
4. Answer all Questions in the ANSWER BOOKLET provided
5. Do not write anything on the question paper
6. Use the back of your booklet for rough work if need be.

SECTION I: MULTIPLE CHOICE QUESTIONS (20 MARKS)

1. The significance of “ISBAR" tool in ICU communication is: -
   A. Assesing patient pain levels.
   B. Reporting patient information.
   C. Prioritising tasks for the day.
   D. Delegating responsibilities.
2. A key principle of critical care nursing is: -
   A. Focus on long-term patient care and rehabilitation.
   B. Providing 24-hour care for patients with life-threatening conditions.
   C. Minimizing the use of technology and advanced monitoring.
   D. Encouraging family involvement only during visiting hours.
3. The normal duration of the PR interval on an ECG is: -
   A. 0.08-0.12 seconds
   B. 0.12-0.20 seconds
   C. 0.20-0.30 seconds
   D. >0.30 seconds
4. The correct GCS score for a a patient who opens eyes on sternal rub, makes incomprehensible sounds, and withdraws arm upon application of nail bed pressure is: -
   A. 8
   B. 7
   C. 9
   D. 12
5. The primary purpose of Central Venous Pressure monitoring is to: -
   A. Assess the cardiac function
   B. Guide fluid management
   C. Monitor cardiac perfusion
   D. Monitor blood pressure.

6. A progressive conductive hearing loss caused by abnormal bone growth in the middle ear is known as:-
   A. Mastoiditis
   B. Otosclerosis
   C. Labyrinthitis
   D. Cerumen impaction
7. Inflammation of the nasal mucosa commonly caused by infection or allergy is:
   A. Sinusitis
   B. Rhinitis
   C. Laryngitis
   D. Pharyngitis
8. During eye examination, the response seen when there is bilateral pupillary constriction when light is shone into one eye is:-
   A. Accommodation
   B. Consensual reflex
   C. Convergence
   D. Visual fixation
9. A patient undergoing tonometry is most likely being evaluated for:-
   A. Cataract
   B. Glaucoma
   C. Retinal detachment
   D. Macular degeneration
10. A person who sees near objects clearly but distant objects poorly likely has:-
   A. Hyperopia
   B. Myopia
   C. Astigmatism
   D. Presbyopia
11. Gradual loss of central vision in elderly patients is characteristic of:-
   A. Macular degeneration
   B. Glaucoma
   C. Keratitis
   D. Blepharitis

12. Tropical ulcers are commonly associated with:-
    A. Poor hygiene in minor skin injuries
    B. Viral infections in minor skin injuries
    C. Cold climate exposure in major skin injuries
    D. Genetic mutations affecting the skin
13. A painful red lump on the eyelid caused by infection of an eyelash follicle is called:
    A. Chalazion
    B. Stye
    C. Blepharitis
    D. Pterygium
14. A condition characterized by red eye and sticky discharge that glues eyelids in the morning is:-
    A. Keratitis
    B. Uveitis
    C. Conjunctivitis
    D. Cataract
15. Acne vulgaris mainly results from:-
    A. Increased melanin production
    B. Blockage and inflammation of sebaceous glands
    C. Viral infection of skin
    D. Autoimmune destruction

16. Immediate intervention is required in a post-operative client in the PACU presenting with : -
    A. Urinary output of 60 ml/kg/hour
    B. Temperature of 40 ° C
    C. Blood pressure of 100/78 mm Hg
    D. Serous drainage on the surgical dressing

17. The appropriate pre-operative protocol guiding patient nutrition includes:-
    A. Nil per Oral (NPO) 12 hours prior to surgery
    B. Full liquid diet upto 2 Hours prior to surgery
    C. NPO for 6-8 Hours prior to surgery
    D. NPO for 0-2 hours prior to surgery

18. During initiation of spinal anaesthesia it is critical to monitor the client for: -

A. Level of consciousness
B. Motion and sensation to the lower extremities
C. Blood pressure and urine output
D. Body temperature

19. In anesthesia, moderate (conscious) sedation is characterized by:-

A. Loss of sensation in a specific area
B. Depressed level of consciousness
C. Outpatient procedure
D. Complete immobility

20. Regarding post operative wound dihescence :-

A. Obesity is a risk factor
B. Splinting when coughing post surgically increases the risk of its occurence
C. Is common following short surgical proceedures
D. Repair is done at the bedside

SECTION II: SHORT ANSWER QUESTION (30 MARKS)

1. State Five (5) roles of the nurse in dental procedures. (5 Marks)
2. Outline Five (5) skin changes associated with ageing. (5 Marks)
3. Regarding Infection prevention and Control in the Critical Care Unit:-
    a. Define care bundles (1 Mark)
    b. State Four (4) types of infections (4 Marks)
4. List four (4) roles of a scrub nurse in the operating theatre (2 Marks)
5. Outline the 3 phases of anaesthesia (3 Marks)
6. State five (5) critical nursing assessments conducted on a patient received in the Post Anaesthesia Care Unit (PACU) (5 Marks)
7. Explain Five (5) systemic causes of epistaxis. (5 Marks)

SECTION III: LONG ANSWER QUESTION (20 MARKS)

1. Mr. P, a 75-year-old alert male client with benign prostatic hypertrophy is scheduled for a prostatectomy.
    a. List four (4) patient factors that increase surgical risk (2 Marks)
    b. Regarding Anaesthesia:
        i. Outline the Four (4) major physiological effects achieved by general anaesthesia (4 Marks)
        ii. Outline the role of any two (2) preoperative medications given "on call" (2 Marks)
    c. Outline four (4) factors that should be considered when positioning Mr. P on the operating table (4 Marks)
    d. Describe the immediate Nursing management of the patient for the first 12 hours post operatively (8 Marks)

MARKING KEY

MSQs (20 Marks)

1. The significance of “ISBAR" tool in ICU communication is: -
   A. It is a tool to assess patient pain levels.
   B. It provides a structured format for reporting patient information.
   C. It helps in prioritizing tasks for the day.
   D. It is a method for delegating responsibilities.

2. A key principle of critical care nursing is: -
   A. Focus on long-term patient care and rehabilitation.
   B. Providing 24-hour care for patients with life-threatening conditions.
   C. Minimizing the use of technology and advanced monitoring.
   D. Encouraging family involvement only during visiting hours.
3. The normal duration of the PR interval on an ECG is: -
   A. 0.08-0.12 seconds
   B. 0.12-0.20 seconds
   C. 0.20-0.30 seconds
   D. >0.30 seconds
4. A 35-year-old female is admitted to the ICU after a motor vehicle accident. Upon assessment, the patient opens eyes on sternal rub, makes incomprehensible sounds, and withdraws his arm when pressure is applied in her nail. The correct GCS for this patient is: -
   A. 8
   B. 7
   C. 9
   D. 12
5. The primary purpose of Central Venous Pressure monitoring is: -
   A. To assess the cardiac function
   B. To guide fluid management
   C. To monitor cardiac perfusion
   D. To monitor blood pressure.

6. **B. Otosclerosis** – Progressive conductive hearing loss due to abnormal bone growth in the middle ear.
7. **B. Rhinitis** – Inflammation of the nasal mucosa from infection or allergy.
8. **B. Consensual reflex** – Both pupils constrict when light is shone in one eye.
9. **B. Glaucoma** – Tonometry measures intraocular pressure to evaluate glaucoma.
10. **B. Myopia** – Near objects clear, distant objects blurry.
11. **A. Macular degeneration** – Gradual loss of central vision in elderly patients.
12. **A. Poor hygiene and minor skin injuries in tropical climates** – Cause of tropical ulcers.
13. **B. Stye (Hordeolum)** – Painful red lump from eyelash follicle infection.
14. **C. Conjunctivitis** – Red eye with sticky discharge gluing eyelids.
15. **B. Blockage and inflammation of sebaceous glands** – Pathophysiology of acne vulgaris.
16. C
17. B
18. D
19. B
20. B

Short Answer Questions (30 Marks)

1. State Five (5) roles of the nurse in dental procedures (5 Marks):

1. Prepare and maintain a sterile environment for dental procedures.
2. Assist the dentist during procedures (hand instruments, suction, etc.).
3. Educate patients on oral hygiene and post-procedure care.
4. Monitor patient vital signs and comfort during procedures.
5. Maintain dental records and documentation of treatments.

2. Outline Five (5) skin changes associated with ageing (5 Marks):

1. **Thinning of the skin** – Epidermis and dermis become thinner, making skin more fragile.
2. **Loss of elasticity** – Decreased collagen and elastin result in wrinkling and sagging.
3. **Dryness** – Reduced sebaceous and sweat gland activity leads to dry, flaky skin.
4. **Pigmentation changes** – Appearance of age spots, liver spots, or uneven pigmentation.
5. **Delayed wound healing** – Slower regeneration of skin and slower response to injury.

3. a) Define care bundles (1mrk)

Simple sets of evidence-based practices; when implemented collectively, improve the reliability of their delivery and improve patient outcomes.

b) State Four (4) types of infection in Critical Care Unit (4 mrks)

Bloodstream infections-Central line associated blood stream infection (CLABSI)
Pneumonia-Ventilator Associated Pneumonia.
Urinary tract infections-Catheter associated urinary tract infections.
Wound infections-Surgical site infections.

4. Roles of a scrub nurse

Before surgery

1. Prepares and checks all surgical instruments and equipment
2. Ensures the operating room is sterile and ready
3. Performs surgical hand scrub and dons' sterile gown and gloves
4. Assists the surgeon and assistants with sterile attire
5. Sets up the sterile field and organizes instruments on the mayo stand and back table
6. Performs initial counts of sponges, needles, and instruments with the circulating nurse

During Surgery

1. Maintains sterility of the surgical field
2. Selects and passes instruments to the surgeon as needed
3. Anticipates the surgeon's needs based on procedure knowledge
4. Monitors for breaks in sterile technique
5. Keeps track of instruments and supplies used

6. Assists with suctioning, retracting, and other tasks as directed

After Surgery

1. Performs final counts of instruments, sponges, and needles

2. Assists with dressing the surgical site

3. Helps remove drapes and prepares the patient for transfer

4. Cleans and organizes used instruments

5. Completes documentation related to the procedure and patient handover .

5. ***Outline 3 phases of general anaesthesia***

Induction: Induction begins with administration of the aesthetic agent and continues until the patient is ready for the incision.

Maintenance: Maintenance continues from this point until near the completion of the procedure.

Emergence: Emergence starts as the patient begins to awaken from the altered state induced by the anaesthesia ends when the patient is ready to leave the operating room; the length of time depends on the depth and length of anaesthesia

6. Outline 4 immediate nursing assessment on a patient immediately post surgery (5 marks)

The nurse will assess the following:

1. Airway and Breathing • Check for a clear airway and adequate oxygenation • Monitor respiratory rate, depth, and effort • Assess for signs of hypoxia or airway obstruction

2. Circulation • Measure blood pressure, heart rate, and capillary refill • Observe for bleeding at the surgical site or drains • Monitor skin color and temperature for signs of shock • Evaluate peripheral pulses and overall perfusion • Ensure oxygen delivery devices are functioning properly

3.Level of Consciousness • Assess responsiveness and orientation • Monitor for signs of delirium, confusion, or delayed emergence from anaesthesia • Use tools like the Glasgow Coma Scale if needed

4. Pain and Surgical Site • Evaluate pain level using a standardized scale • Inspect the surgical site for redness, swelling, drainage, bleeding or dressing integrity • Check for presence and output of drains or catheters • Ensure pain management protocols are initiated

---

Long Essay Question – (20 Marks)

A list 6 risk factors for surgical complication(6mks) A. Hypovolemia B. Dehydration and electrolyte imbalance C. Nutritional deficits D. Extremes of age E. Infection and sepsis F. Toxic conditions G. Immunologic abnormalities H. Pulmonary diseases-obstructive disease, restrictive disorder and respiratory infections I. Renal or urinary tract disease-decreased renal function, obstruction, UTI J. Pregnancy -diminished maternal physiologic reserve K. Cardiac diseases-coronary artery disease, cardiac failure, HPN, dysrhythmias, L. prosthetic valve M. Hepatic disease-cirrhosis, hepatitis N. Preexisting mental and physical disability

B. **Describe the preoperative assessment that you will perform on the client in preparation for surgery(8mks**) Assessment of the surgical patient includes the following: Obtaining a health history and performing a physical assessment to establish a baseline data. • Identifying risk factors and allergies that could pose surgical complications • Identifying medications and treatments the patient is currently receiving • Determining the teaching and psychosocial needs of the patient and family • Determining postsurgical support and referral needs for recovery health history includes:

Past medical history • Provides information about past and current illnesses. Pathologic changes associated with past and current illnesses increase surgical risk and postoperative complications. • Preoperative assessments and documentation are necessary: to provide a database for individualized assessment, interventions in the intraoperative and postoperative phases of care. **Medication use** • The use of prescribed, over-the-counter, or herbal drugs can affect the patient's reaction to and increase the risk, from the stress of surgery and the effects

of the anaesthetic agent. Some herbal products can increase bleeding while others may potentiate the actions of depressant anaesthetic drugs. • Information about previous surgeries is important for meeting the patient's physical and psychological needs throughout the perioperative period. Physical implications of previous surgeries are important to the intraoperative and postoperative phases (e.g., previous heart or lung surgery) this may necessitate adaptations in anesthesia and in positioning during surgery). • Complications during or after prior surgery, such as malignant hyperthermia, latex sensitivity, pneumonia, thrombophlebitis, or surgical site infection, may put the patient at risk during this surgery, necessitating individualized postoperative monitoring.

Nutrition status • Both malnutrition and obesity increase surgical risk. Surgery increases the body's need for nutrients necessary for normal tissue healing and resistance to infection. • A malnourished patient is at a higher risk for alterations in fluid and electrolyte balance, delay in wound healing, and wound infection. • Obese patients are at increased risk for respiratory, cardiovascular, positional injury, deep vein thrombosis, and gastrointestinal problems.

Nutrition and fluid need • Patients need to be well nourished and hydrated before surgery to counterbalance fluid, blood, and electrolyte loss during surgery and to facilitate anesthesia delivery and tissue healing after surgery. • Preoperative assessments provide a baseline for physical preparation for surgery, including the need for supplemental nutrition, fluids, or electrolytes. • A patient who is undernourished may require parenteral nutrition and IV electrolyte replacements. • If the patient's screening tests show a haemoglobin level of less than 10 g/dL and a haematocrit of less than 33%, blood or blood component therapy may be given preoperatively to maintain volume and increase the oxygenation of tissue during surgery. • Ensure the patient follows pre-op fasting guidelines if required.

Alcohol and drug use • Patients with a large habitual intake of alcohol require larger doses of anaesthetic agents and postoperative analgesics- increasing the risk for drug-related complications. • Patients who use illicit drugs are at risk for interactions with anaesthetic agents • Information from the health history allows the nurse to individualize interventions to promote rest and sleep. **Activities of daily living** • Many surgical procedures require a delay in returning to a career or occupation or may affect how the patient earns a living. • Knowledge of a patient's usual work and concerns about returning to work help the nurse plan necessary teaching and referrals.

Coping patterns and support system • Assessing the patient's psychological, sociocultural, and spiritual dimensions is as important as the physical history and examination. Surgery is a major psychological stressor and affects coping patterns, support systems, and individual human needs. • A surgical procedure, whether it is planned or unexpected, major or minor, causes anxiety and fear. • Therapeutic communication skills are essential for establishing the trusting nurse– patient relationship that is necessary to identify and resolve fear.

Coping patterns • Encourage the patient to identify and verbalize fears; often simply talking about fears helps to diminish their magnitude. • At the same time, incorrect knowledge can be identified and corrected, strengths can be identified, and teaching can be done • Encourage family members to provide support.

Socio cultural needs • Reactions to teaching, physical care, and pain are also influenced by family values and cultural/ethnic identity. Cultural and ethnic influences also affect the patient's responses to and perceptions of the surgical experience. • The patient's cultural background requires that nursing interventions be individualized to meet needs in language, food preferences, family interactions and participation, personal space, and health beliefs and practices

Physical assessment • Assessing the patient's current physical status provides data for interventions to decrease surgical risk and potential postoperative complications.

Diagnostic Tests • Review results of required labs and imaging: blood tests, ECG, chest X-ray, etc. • Confirm clearance from other specialties (e.g., cardiology). Screening tests provide objective data of normal body function. In cases of abnormalities, such tests provide data for medical interventions to improve the patient's physical status and thus decrease the risks for surgical complications. The nurse's role is to ensure that the tests are explained to the patient, appropriate specimens are collected, the results are documented in the patient's record before surgery, and abnormal findings are reported.

Preoperative teaching • The most common causes of postoperative complications are alterations in cardiovascular and respiratory function, including atelectasis, pneumonia, thrombophlebitis, and emboli. • Physical activities to reduce the risk for these complications are deep breathing, coughing, incentive spirometry, leg exercises, and turning in bed. These activities are taught in the preoperative period. • The patient should be able to state the purpose and demonstrate the activities before going to surgery.

Rest and sleep • Rest and sleep are important in reducing the stress before surgery and for healing and recovery after surgery. • The nurse can facilitate rest and sleep in the immediate preoperative period by: • meeting psychological needs, carrying out teaching, providing a quiet environment, • encouraging relaxation or comfort measures that are personally effective for the individual patient, or administering the prescribed bedtime sedative medication for hospitalized surgical patients.

Elimination • Peristalsis does not return for 24 to 48 hours after the bowel is handled, so preoperative cleansing helps to decrease postoperative constipation. • An empty bowel also prevents contamination of the surgical area during surgery. • Insertion of an indwelling urinary catheter may be ordered before surgery, especially in patients having pelvic surgery, to prevent bladder distention or accidental injury. • If an indwelling catheter is not in place, the patient should void immediately before receiving preoperative medications to ensure an empty bladder during surgery.

Risk assessment • Evaluate the client's surgical risk profile, including factors like age, comorbidities, and anaesthesia tolerance. • Plan for postoperative care including pain management and recovery needs. Consent and Education • Verify that informed consent has been obtained. • Provide clear preoperative instructions (e.g., hygiene, medication, arrival time).

Summary • Obtain History • • Physical exam • • Nutrition and fluid status • • Dentition • • Drug and alcohol use • • Respiratory status • • Cardiovascular status

c) **Describe the immediate Nursing management for the first 12 hours post operatively(8mks)** • Skilled assessments of the patient's airway, respiratory function, cardiovascular function, skin colour, level of consciousness, and ability to respond to commands • The nurse performs and documents a baseline assessment, then checks the surgical site for drainage or haemorrhage and makes sure that all drainage tubes and monitoring lines are connected and functioning. • The nurse checks any intravenous (IV) fluids or medications currently infusing and verifies dosage and rate. • After the initial assessment, vital signs are monitored and the patient's general physical status is assessed and documented at least every 15 minutes • The nurse must be aware of any pertinent information from the patient's history that may be significant (eg, patient is deaf or hard of hearing, has a history of seizures, has diabetes, or is allergic to certain medications or to latex) • Nurse Administers post op analgesics to the patient's

Maintaining patent airway • The primary objective in the immediate postoperative period is to maintain ventilation and thus, prevent hypoxemia (reduced oxygen in the blood) and hypercapnia (excess carbon dioxide in the blood). Both can occur if the airway is obstructed and ventilation is reduced (hypoventilation). • Besides checking the physician's orders for and administering supplemental oxygen, the nurse assesses respiratory rate and depth, ease of respirations, oxygen saturation, and breath sounds.

Maintaining cardiovascular stability • To monitor cardiovascular stability, the nurse assesses the patient's mental status; vital signs; cardiac rhythm; skin temperature, colour, and moisture; and urine output. Central venous pressure, pulmonary artery pressure, and arterial lines are monitored if in place. • The nurse also assesses the patency of all IV lines. And monitors for cardiovascular complications Such as hypotension and shock, haemorrhage, hypertension, and dysrhythmias

Relieving pain and anxiety • The nurse monitors the patient's physiologic status, manages pain, and provides psychological support in an effort to relieve the patient's fears and concerns. • The nurse checks the medical record for special needs and concerns of the patient. Opioid analgesics are administered mostly by IV). IV opioids provide immediate pain relief and are short-acting, thus minimizing the potential for drug interactions or prolonged respiratory depression.

Controlling nausea and vomiting • Nausea and vomiting are common post -op, The nurse should intervene at the patient's first report of nausea to control the problem rather than wait for it to progress to vomiting by administering anti emetic drugs • Surgical risks are increased with PONV due to an increase in intraabdominal pressure, elevated central venous pressure, the potential for aspiration, increased heart rate and systemic blood pressure, which increase the risk of myocardial ischemia and dysrhythmias. • Assess breathing and administer supplemental oxygen, if prescribed. • Monitor vital signs and note skin warmth, moisture, and color. • Assess the surgical site and wound drainage systems. • Connect all drainage tubes to gravity or suction as indicated and monitor closed drainage systems. • . Assess level of consciousness, orientation, and ability to move extremities.

Assess pain level, pain characteristics (location, quality) and timing, type, and route of administration of last dose of analgesic. • Administer analgesics as prescribed and assess their effectiveness in relieving pain. • . Place the call light, emesis basin, ice chips (if allowed), and bedpan or urinal within reach. • . Position the patient to enhance comfort, safety, and lung

expansion. • Assess IV sites for patency and infusions for correct rate and solution. • Assess urine output in closed drainage system or the patient's urge to void and bladder distention. • Reinforce the need to begin deep breathing and leg exercises. • . Provide information to the patient and family.

Summary • Pain control • Education • Discharge planning • Interdisciplinary team communication • Vital signs • Colour and temperature of skin • Level of consciousness • Intravenous fluids • Surgical site management • Comfort • Position and safety • Input/ output • EBL • Rule out post-operative complications