

Q1. Glaucoma

a) Definition:

Glaucoma is a group of eye disorders that damage the optic nerve due to increased intraocular pressure (IOP), leading to gradual and irreversible vision loss.

b) Types of Glaucoma:

1. Open-angle glaucoma (chronic)
2. Angle-closure glaucoma (acute)
3. Congenital glaucoma (present at birth)
4. Secondary glaucoma (due to injury, medications, or other eye diseases)

c) Pre, Intra, and Post-operative Care:

◆ Pre-operative care:

- Educate the patient about the surgery.
- Administer prescribed eye drops (e.g., beta-blockers).
- Check IOP and vital signs.

◆ Intra-operative care:

- Laser trabeculoplasty or trabeculectomy under sterile conditions.
- Monitor vital signs.

◆ Post-operative care:

- Administer prescribed medications (anti-inflammatory & antibiotics).
- Avoid eye rubbing, bending, and straining.
- Use eye shield at night.
- Monitor for complications (infection, bleeding, increased IOP).

Q2. Otitis Media

a) Definition:

Otitis media is an inflammation or infection of the middle ear, often caused by bacteria or viruses.

b) Causes & Pathophysiology:

Causes:

- Upper respiratory infections

- Allergies
- Eustachian tube dysfunction
- Smoking

Pathophysiology:

Infection → inflammation → fluid buildup → pressure in the middle ear → pain and possible hearing loss.

c) Symptoms & Diagnostic Evaluation:

Symptoms:

- Ear pain
- Fever
- Hearing loss
- Fluid discharge from ear
- Irritability in children

Diagnostic Evaluation:

- Otoscopy (red, bulging tympanic membrane)
- Tympanometry
- Hearing tests
- Culture of ear discharge (if present)

d) Medical & Nursing Management:

Medical:

- Antibiotics (e.g., amoxicillin)
- Analgesics (pain relief)
- Decongestants

Nursing:

- Monitor temperature and ear discharge
- Encourage fluid intake
- Educate on medication adherence
- Position head elevated
- Prevent ear water exposure

Q3. Burns

This is an important 10-mark question, so the answer is divided into key parts:

a) Definition of Burns:

A burn is an injury to the skin or underlying tissues caused by heat, chemicals, electricity, radiation, or friction. It damages skin cells and may affect deeper tissues depending on the severity.

b) Types of Burns:

- 1. Thermal Burns** – caused by fire, hot liquids, steam.
- 2. Chemical Burns** – from acids or alkalis.
- 3. Electrical Burns** – caused by electric current.
- 4. Radiation Burns** – caused by UV rays or radiation.
- 5. Friction Burns** – due to contact with rough surfaces.

c) Degrees of Burns (Depth of Injury):

- 1. First-Degree (Superficial):**
 - Only epidermis affected
 - Redness, pain, dry skin (e.g., sunburn)
 - Heals in 3–5 days
- 2. Second-Degree (Partial Thickness):**
 - Involves epidermis and part of dermis
 - Blisters, swelling, severe pain
 - May take 1–3 weeks to heal
- 3. Third-Degree (Full Thickness):**
 - Destroys epidermis, dermis, and deeper tissues
 - Skin may appear white, charred, or leathery
 - Painless due to nerve damage
 - Requires skin grafting

d) Management of Burns in First 48 Hours (Emergency Phase):

Goals:

- Prevent shock
- Maintain fluid and electrolyte balance
- Manage pain
- Prevent infection

Immediate First Aid:

- Remove from burn source
- Stop the burning process (cool water, not ice)
- Cover burn with clean cloth (to prevent infection)
- Avoid applying creams or breaking blisters

Fluid Therapy (Parkland Formula):

Used to calculate fluid needs in first 24 hours:

→ $4 \text{ mL} \times \text{body weight (kg)} \times \% \text{TBSA burned}$

→ Give 50% in first 8 hours, rest over next 16 hours

→ Use Ringer's lactate solution

Pain management:

- IV opioids (e.g., morphine)
- Psychological support

Monitor:

- Urine output
- Vital signs
- Oxygen saturation
- Signs of infection

Q4. Breast Cancer (10 marks)

Definition:

Breast cancer is a type of cancer that develops in the cells of the breast, usually in the ducts (milk-carrying tubes) or lobules (milk-producing glands). It can occur in both women and men, but it is far more common in women.

● **Causes and Risk Factors:**

1. Increasing age
2. Family history or genetic mutation (BRCA1, BRCA2)
3. Early menstruation (before age 12)
4. Late menopause
5. Late pregnancy or no pregnancy
6. Obesity
7. Alcohol consumption
8. Hormone replacement therapy

● **Clinical Features / Symptoms:**

1. Lump in the breast or underarm
2. Change in size or shape of the breast
3. Dimpling or puckering of skin
4. Inverted nipple or nipple discharge (may be bloody)
5. Redness, scaliness, or thickening of the nipple or skin
6. Pain in the breast (not always present)

● **Diagnosis / Investigations:**

1. **Breast self-examination (BSE)**
2. **Clinical breast examination (CBE)**
3. **Mammography** – X-ray of the breast
4. **Ultrasound** – to differentiate between solid and cystic lumps
5. **Fine Needle Aspiration Cytology (FNAC)**
6. **Core biopsy**
7. **MRI of the breast** (in some cases)

● **Medical & Surgical Management:**

◆ Medical:

- Chemotherapy
- Hormone therapy (e.g., Tamoxifen for ER+ cancer)
- Targeted therapy (e.g., Herceptin for HER2+ cancer)
- Radiation therapy

◆ Surgical:

- Lumpectomy (removal of lump only)
- Mastectomy (removal of whole breast)
- Sentinel lymph node biopsy or axillary lymph node dissection

● **Nursing Management:**

1. Emotional and psychological support
2. Pain management
3. Pre- and post-operative care
4. Educating on BSE
5. Monitoring for complications (infection, lymphedema)
6. Nutritional support
7. Maintaining hygiene and wound care
8. Encourage support group participation

Q5. Leukemia (10 marks)

● **Definition:**

Leukemia is a type of cancer of the blood-forming tissues, including the bone marrow and lymphatic system, which leads to the uncontrolled production of abnormal white blood cells (leukocytes). These abnormal cells crowd out healthy blood cells, affecting the body's ability to fight infection, carry oxygen, and control bleeding.

● **Types of Leukemia:**

1. **Acute lymphocytic leukemia (ALL)**
2. **Acute myeloid leukemia (AML)**
3. **Chronic lymphocytic leukemia (CLL)**
4. **Chronic myeloid leukemia (CML)**

Causes and Risk Factors:

1. Genetic mutations
2. Exposure to high levels of radiation
3. Exposure to certain chemicals (e.g., benzene)
4. Previous chemotherapy or radiation therapy
5. Family history
6. Smoking
7. Down syndrome and other genetic disorders

Clinical Features / Symptoms:

1. Fatigue and weakness
2. Frequent infections
3. Fever and night sweats
4. Easy bruising or bleeding (e.g., nosebleeds, gum bleeding)
5. Pale skin
6. Bone or joint pain
7. Swollen lymph nodes, liver, or spleen
8. Weight loss and loss of appetite

Diagnostic Evaluation:

1. Complete blood count (CBC) – shows increased WBC, decreased RBC and platelets
2. Bone marrow aspiration and biopsy – confirms diagnosis
3. Peripheral blood smear

4. Cytogenetic and molecular testing
5. Imaging tests – CT scan, MRI (to check organ involvement)

Medical Management:

- Chemotherapy (main treatment)
- Radiation therapy (sometimes used)
- Targeted therapy (e.g., tyrosine kinase inhibitors for CML)
- Bone marrow or stem cell transplantation
- Supportive treatments: blood transfusions, antibiotics, growth factors

Nursing Management:

1. Monitor vital signs and blood counts regularly
2. Prevent and manage infections (neutropenic precautions)
3. Maintain oral hygiene to prevent mouth sores
4. Monitor for bleeding and educate patient on precautions
5. Provide nutritional support and small frequent meals
6. Manage side effects of chemotherapy (nausea, vomiting, fatigue)
7. Offer psychological support to the patient and family
8. Educate about treatment plan, medications, and home care

Q6. Cervical Cancer (10 Marks)

Definition:

Cervical cancer is a malignant tumor that occurs in the cervix — the lower part of the uterus that connects to the vagina. It is most commonly caused by persistent infection with high-risk types of the human papillomavirus (HPV).

Causes and Risk Factors:

1. Human papillomavirus (HPV) infection – especially types 16 and 18

2. Multiple sexual partners
3. Early age at first sexual intercourse
4. Smoking
5. Weakened immune system (e.g., HIV infection)
6. Long-term use of oral contraceptives
7. Poor genital hygiene
8. Family history of cervical cancer

Clinical Features / Symptoms:

1. Abnormal vaginal bleeding (after intercourse, between periods, or after menopause)
2. Foul-smelling vaginal discharge
3. Pelvic pain
4. Pain during intercourse
5. Blood in urine or stool (in advanced stages)
6. Weight loss, fatigue (in later stages)

Diagnostic Evaluation:

1. Pap smear test – detects precancerous and cancerous cells
2. HPV DNA test – checks for high-risk HPV types
3. Colposcopy – visual inspection of cervix using magnifying device
4. Cervical biopsy – confirms cancer
5. MRI, CT scan, or PET scan – for staging and metastasis evaluation

Medical Management:

- Depends on stage of cancer
6. Surgery (e.g., hysterectomy – removal of uterus)
 7. Radiation therapy
 8. Chemotherapy

9. Targeted therapy and immunotherapy in advanced cases

Nursing Management:

1. Educate about HPV vaccination and regular screening (Pap smear)
2. Monitor and manage side effects of treatment (nausea, fatigue, skin issues)
3. Provide emotional support and counseling
4. Educate on hygiene and self-care practices
5. Assist with pain management
6. Ensure nutritional support and hydration
7. Encourage follow-up care and regular medical visits

Q7. Lung Cancer (10 Marks)

Definition:

Lung cancer is a type of cancer that begins in the lungs, typically in the cells lining the air passages. It is one of the leading causes of cancer-related deaths worldwide.

Types of Lung Cancer:

1. Non-Small Cell Lung Cancer (NSCLC) – most common
 - Includes adenocarcinoma, squamous cell carcinoma, large cell carcinoma
2. Small Cell Lung Cancer (SCLC) – more aggressive and fast-growing

Causes and Risk Factors:

1. Cigarette smoking (primary cause)
2. Passive smoking (secondhand smoke)
3. Exposure to asbestos, radon gas, air pollution
4. Occupational exposure (arsenic, coal fumes)
5. Family history
6. Chronic lung diseases (e.g., COPD)

7. Genetic mutations

Clinical Features / Symptoms:

1. Persistent cough (may produce blood)
2. Chest pain
3. Shortness of breath (dyspnea)
4. Hoarseness of voice
5. Weight loss and fatigue
6. Recurrent respiratory infections (e.g., pneumonia, bronchitis)
7. Wheezing
8. Swelling in face or neck (if superior vena cava is compressed)

Diagnostic Evaluation:

1. Chest X-ray – shows mass or nodule
2. CT scan / MRI of chest
3. Sputum cytology – to detect cancer cells
4. Bronchoscopy – to view and biopsy lung tissues
5. Fine needle aspiration (FNA) biopsy
6. PET scan – for staging and metastasis
7. Pulmonary function tests – assess lung capacity

Medical Management:

1. Surgery (e.g., lobectomy, pneumonectomy – removal of lobe or lung)
2. Chemotherapy
3. Radiation therapy
4. Targeted therapy (e.g., EGFR inhibitors)
5. Immunotherapy (helps the immune system fight cancer)
6. Palliative care (for symptom management in advanced stages)

Nursing Management:

1. Monitor respiratory status and oxygen saturation
2. Administer oxygen therapy as prescribed
3. Manage side effects of chemotherapy and radiation
4. Educate on smoking cessation and lifestyle changes
5. Provide emotional and psychological support
6. Assist with breathing exercises and physiotherapy
7. Monitor for signs of infection or bleeding
8. Encourage balanced nutrition and fluid intake

Q8. Diabetes Mellitus (10 Marks)

Definition:

Diabetes Mellitus (DM) is a chronic metabolic disorder characterized by high levels of glucose (sugar) in the blood due to either insufficient insulin production or the body's inability to use insulin effectively.

Types of Diabetes:

1. Type 1 Diabetes – insulin-dependent; autoimmune destruction of pancreatic beta cells
2. Type 2 Diabetes – non-insulin-dependent; body becomes resistant to insulin
3. Gestational Diabetes – develops during pregnancy
4. Secondary Diabetes – caused by other medical conditions or medications

Causes and Risk Factors:

- Genetic predisposition
- Obesity and physical inactivity
- Unhealthy diet (high sugar and fat)
- Increasing age
- Family history of diabetes

- Hypertension and high cholesterol
- Gestational diabetes history
- Polycystic ovary syndrome (PCOS)

Signs and Symptoms:

1. Polyuria – frequent urination
2. Polydipsia – increased thirst
3. Polyphagia – increased hunger
4. Unexplained weight loss (especially in type 1)
5. Fatigue and weakness
6. Slow-healing wounds
7. Blurred vision
8. Tingling or numbness in hands and feet

Diagnostic Tests:

1. Fasting blood sugar (FBS) – ≥ 126 mg/dL
2. Random blood sugar – ≥ 200 mg/dL
3. Oral glucose tolerance test (OGTT)
4. HbA1c (Glycosylated Hemoglobin) – $\geq 6.5\%$
5. Urine test for glucose and ketones

Medical Management:

1. Type 1 – Insulin therapy is essential
2. Type 2 – Oral hypoglycemic agents (e.g., Metformin), insulin if needed
3. Diet control – balanced low-sugar, low-fat meals
4. Regular exercise
5. Monitoring blood glucose levels regularly
6. Weight management

Nursing Management:

1. Monitor blood glucose levels regularly
2. Administer insulin or oral medications as prescribed
3. Educate patient on diet, exercise, and medication compliance
4. Teach self-monitoring of blood glucose (SMBG)
5. Prevent complications – foot care, eye checkups, kidney function tests
6. Monitor for signs of hypoglycemia (shaking, sweating, confusion)
7. Encourage regular follow-up visits
8. Provide psychological support and lifestyle modification counseling

Q9. Rational Detachment (5 Marks)

Definition:

Rational Detachment is the ability of a nurse or caregiver to remain calm, objective, and in control of their emotions, even when faced with challenging or aggressive behavior from a patient. It allows professionals to respond thoughtfully rather than react emotionally.

Purpose:

- To prevent escalation of conflict or aggression
- To maintain professional behavior
- To ensure the safety of both the patient and the caregiver
- To protect emotional well-being of the caregiver

Importance in Nursing:

1. Helps in maintaining therapeutic relationships
2. Prevents personal emotional burnout
3. Supports patient-centered care during crises
4. Promotes safe and respectful responses to difficult situations

● **How to Practice Rational Detachment:**

- Recognize your own emotional triggers
- Take deep breaths and pause before reacting
- Use positive self-talk and remain composed
- Focus on patient needs and de-escalation techniques
- Seek support or supervision when needed

Q10. Seizure (5 Marks)

● **Definition:**

A **seizure** is a sudden, uncontrolled electrical disturbance in the brain that causes changes in behavior, movements, feelings, and levels of consciousness.

● **Causes:**

- **Epilepsy** (most common)
- **High fever** (especially in children)
- **Head injury**
- **Brain infection** (e.g., meningitis, encephalitis)
- **Brain tumor**
- **Stroke**
- **Electrolyte imbalance**
- **Low blood sugar (hypoglycemia)**

● **Types of Seizures:**

1. **Generalized Seizures** – affect both sides of the brain
 - Tonic-clonic (grand mal)
 - Absence (petit mal)

2. **Focal Seizures** – affect one part of the brain

- Simple partial
- Complex partial

Signs & Symptoms:

- Sudden jerky movements
- Staring or confusion
- Loss of consciousness
- Frothing at mouth
- Involuntary urination
- Temporary confusion or memory loss

Nursing Management:

1. **During Seizure:**

- Ensure patient safety – remove harmful objects
- Do not restrain or put anything in the mouth
- Place patient in side-lying position
- Monitor duration and type of seizure

2. **After Seizure:**

- Reassure the patient
- Check vital signs
- Provide oxygen if needed
- Document the seizure details
- Inform doctor

Q11. Head Injury (5 Marks)

Definition:

A **head injury** refers to any trauma or damage to the scalp, skull, or brain. It may be mild (like a bump) or severe (like a traumatic brain injury).

● **Causes:**

- Road traffic accidents (RTA)
- Falls (especially in elderly and children)
- Assaults or violence
- Sports injuries
- Industrial or workplace accidents

● **Types of Head Injury:**

1. **Concussion** – temporary brain dysfunction
2. **Contusion** – bruising of brain tissue
3. **Skull fracture** – break in the skull bone
4. **Intracranial hemorrhage** – bleeding inside the brain (e.g., epidural, subdural, intracerebral)

● **Signs and Symptoms:**

- Loss of consciousness
- Headache or dizziness
- Vomiting
- Confusion or memory loss
- Bleeding from nose, ear, or scalp
- Unequal pupil size
- Seizures
- Clear fluid (CSF) leakage from nose or ears

● **Nursing Management:**

1. **Initial Care (Emergency):**

- Ensure airway, breathing, and circulation (ABC)
- Immobilize the neck if spinal injury is suspected
- Control bleeding with sterile dressing
- Monitor consciousness (Glasgow Coma Scale)

2. Ongoing Care:

- Monitor vital signs and neurological status regularly
- Maintain head elevation to reduce intracranial pressure
- Provide oxygen therapy if needed
- Prevent complications (bed sores, infections)
- Give emotional support to patient and family

Q12. Meningitis (5 Marks)

Definition:

Meningitis is the inflammation of the meninges, which are the protective membranes covering the brain and spinal cord. It can be caused by infection (bacterial, viral, fungal) or other non-infectious factors.

Types:

1. **Bacterial meningitis** – more severe, life-threatening
2. **Viral meningitis** – usually mild and self-limiting
3. **Fungal meningitis** – less common, occurs in immunocompromised
4. **Tubercular meningitis** – caused by *Mycobacterium tuberculosis*

Causes:

- Bacteria: *Neisseria meningitidis*, *Streptococcus pneumoniae*
- Viruses: Enteroviruses, HSV (Herpes Simplex Virus)
- Fungi: *Cryptococcus neoformans*
- TB bacteria

- Head injury, neurosurgery, or weak immune system

Signs and Symptoms:

- Severe headache
- Neck stiffness
- High fever
- Sensitivity to light (photophobia)
- Nausea/vomiting
- Confusion or altered consciousness
- Seizures
- In infants: bulging fontanelle, poor feeding

Diagnostic Tests:

- **Lumbar puncture (CSF analysis)**
- Blood culture
- CT scan or MRI
- Complete blood count (CBC)

Nursing Management:

1. **Isolation (if bacterial)**
2. **Monitor neurological status**
3. **Administer antibiotics/antivirals/antifungals as prescribed**
4. **Control fever with antipyretics**
5. **Hydration through IV fluids**
6. **Maintain a quiet, dimly-lit environment**
7. **Monitor for seizures**
8. **Educate patient/family on prevention (vaccination)**

Q13. Pelvic Inflammatory Disease (PID) (5 Marks)

a) Define PID:

Pelvic Inflammatory Disease (PID) is an infection of the female reproductive organs, including the uterus, fallopian tubes, and ovaries. It usually occurs when sexually transmitted bacteria spread from the vagina to the uterus and upper genital tract.

b) Causes of PID:

- **Sexually transmitted infections (STIs):**
 - *Chlamydia trachomatis*
 - *Neisseria gonorrhoeae*
- **Bacterial vaginosis**
- **Unsafe abortions or childbirth**
- **Intrauterine device (IUD) insertion**
- **Multiple sexual partners**
- **Unprotected sex**

c) Management (Mx):

Medical Management

- Broad-spectrum antibiotics (e.g., doxycycline, metronidazole)
- Analgesics for pain relief
- Antipyretics to control fever
- Hospitalization if severe infection or complications

Surgical Management

- Laparoscopy or surgery in case of abscess or failed antibiotic therapy

Nursing Management

- Monitor vital signs and pain level
- Administer prescribed antibiotics and fluids

- Educate patient about safe sexual practices
- Promote perineal hygiene
- Encourage follow-up care and completion of antibiotic course
- Inform partner testing and treatment

Q14. Hepatitis (5 Marks)

Definition:

Hepatitis is the inflammation of the liver, usually caused by a viral infection, but it can also result from toxins, alcohol, drugs, or autoimmune conditions.

Types of Viral Hepatitis:

Type	Mode of Transmission	Features
Hepatitis A (HAV)	Fecal-oral route (contaminated food/water)	Acute, self-limiting, no chronic stage
Hepatitis B (HBV)	Blood, sexual contact, mother-to-child	May become chronic, can cause liver cancer
Hepatitis C (HCV)	Blood and blood products	Often becomes chronic, no vaccine
Hepatitis D (HDV)	Requires HBV for replication	Co-infection worsens prognosis
Hepatitis E (HEV)	Fecal-oral route	Dangerous in pregnant women

Signs & Symptoms:

- Fatigue and weakness
- Fever
- Loss of appetite
- Nausea and vomiting
- Abdominal pain (right upper side)
- Jaundice (yellowing of skin and eyes)
- Dark-colored urine
- Clay-colored stools

Management:

Medical:

- Rest, hydration, and proper nutrition
- Antiviral drugs (for HBV and HCV)
- Avoid alcohol and liver-toxic drugs
- Hospitalization in severe cases

Nursing:

- Monitor liver function tests (LFTs)
- Educate on hand hygiene and safe practices
- Prevent transmission to others (use gloves, dispose of needles safely)
- Promote balanced diet and rest
- Provide psychological support

Q15. Congestive Heart Failure (CHF) (5 Marks)

Definition:

Congestive Heart Failure (CHF) is a chronic condition in which the heart is unable to pump blood effectively to meet the body's needs. This leads to a buildup of fluid (congestion) in the lungs, legs, and other tissues.

Causes:

- Coronary artery disease (CAD)
- Hypertension (high blood pressure)
- Heart attack (myocardial infarction)
- Cardiomyopathy
- Heart valve diseases

- Congenital heart defects
- Diabetes mellitus

Types:

1. Left-sided heart failure – fluid backs up into lungs (pulmonary congestion)
2. Right-sided heart failure – fluid builds up in legs, abdomen (systemic congestion)
3. Systolic failure – weakened heart muscle
4. Diastolic failure – stiff heart muscle

Signs & Symptoms:

- Shortness of breath (especially when lying down)
- Fatigue and weakness
- Swelling in legs, ankles, and abdomen (edema)
- Rapid or irregular heartbeat
- Persistent cough or wheezing
- Weight gain due to fluid retention
- Reduced exercise tolerance

Management:

Medical:

- Diuretics (e.g., furosemide) to remove excess fluid
- ACE inhibitors, beta-blockers, digoxin
- Salt and fluid restriction
- Oxygen therapy if needed

Nursing:

- Monitor vital signs and daily weight
- Assess for signs of fluid overload
- Administer medications as prescribed
- Educate on low-sodium diet and fluid intake

- Encourage rest and gradual activity
- Support emotional well-being

Q16. Dengue Fever (5 Marks)

Definition:

Dengue fever is a mosquito-borne viral infection caused by the dengue virus, transmitted primarily by the *Aedes aegypti* mosquito. It leads to high fever, severe headache, joint and muscle pain, and in severe cases, bleeding and shock.

Causes:

- Caused by dengue virus (DENV-1, DENV-2, DENV-3, DENV-4)
- Spread through the bite of infected *Aedes* mosquitoes
- Mosquitoes bite during early morning and evening

Signs and Symptoms:

- Sudden high fever
- Severe headache (especially behind eyes)
- Muscle, joint, and bone pain ("breakbone fever")
- Nausea and vomiting
- Skin rash
- Bleeding from nose or gums (in severe cases)
- Fatigue and weakness
- Low platelet count in blood tests

Management:

Medical:

- No specific antiviral treatment
- Symptomatic treatment:

- Paracetamol for fever (avoid aspirin/NSAIDs)
- Intravenous fluids if dehydrated
- Blood/platelet transfusion in severe cases

Nursing Care:

- Monitor temperature and vital signs
- Monitor for signs of bleeding and shock
- Ensure adequate hydration
- Monitor fluid intake/output
- Educate patient to avoid mosquito bites (nets, repellents)
- Supportive care and emotional reassurance

Q17. Pneumonia (5 Marks)

Definition:

Pneumonia is an infection that inflames the air sacs (alveoli) in one or both lungs. The air sacs may fill with fluid or pus, causing cough, fever, and difficulty breathing.

Causes:

- Bacteria: *Streptococcus pneumoniae* (most common), *Haemophilus influenzae*
- Viruses: Influenza, RSV, COVID-19
- Fungi: *Histoplasma*, *Pneumocystis* (in immunocompromised)
- Aspiration of food, fluid, or vomit into the lungs

Types:

1. Community-acquired pneumonia (CAP)
2. Hospital-acquired pneumonia (HAP)
3. Ventilator-associated pneumonia (VAP)
4. Aspiration pneumonia

Signs & Symptoms:

- Cough with sputum (yellow/green)
- Fever and chills
- Chest pain (especially during breathing or coughing)
- Shortness of breath
- Fatigue and weakness
- Fast breathing or heartbeat
- In elderly: confusion or low body temperature

Management:

Medical:

- Antibiotics (if bacterial)
- Antiviral or antifungal drugs (if needed)
- Antipyretics and pain relievers
- Oxygen therapy in severe cases
- Hospitalization if serious condition

Nursing Care:

- Monitor respiratory rate and oxygen saturation
- Provide oxygen as needed
- Encourage coughing and deep breathing exercises
- Maintain hydration and nutrition
- Position patient upright to aid breathing
- Educate on hand hygiene and vaccination (pneumococcal, flu)

Q18. Tuberculosis (TB) (5 Marks)

Definition:

Tuberculosis (TB) is a contagious and potentially serious infectious disease caused by the bacterium *Mycobacterium tuberculosis*. It primarily affects the lungs but can also affect other parts of the body (extrapulmonary TB).

● **Causes:**

- Caused by *Mycobacterium tuberculosis*
- Spread through the air via droplets from coughing, sneezing, or talking of an infected person

● **Types:**

1. Pulmonary TB – affects lungs
2. Extrapulmonary TB – affects organs like lymph nodes, bones, kidneys, brain
3. Latent TB – infection is present but inactive and non-contagious
4. Active TB – disease is active and contagious

● **Signs & Symptoms:**

- Persistent cough for more than 2–3 weeks
- Blood in sputum (hemoptysis)
- Weight loss
- Fever and chills
- Night sweats
- Fatigue and weakness
- Chest pain
- Loss of appetite

● **Diagnostic Tests:**

- Sputum smear and culture (for AFB)
- Chest X-ray
- Tuberculin skin test (Mantoux test)
- CBNAAT / GeneXpert test

- ESR and blood tests

Management:

Medical Treatment:

- Antitubercular Therapy (ATT) under DOTS program:
 - Isoniazid (INH), Rifampicin, Pyrazinamide, Ethambutol
- Treatment lasts for at least 6 months

Nursing Care:

- Ensure compliance with full course of medication
- Educate about cough hygiene and use of mask
- Provide nutritional support
- Isolate patient in initial phase if needed
- Monitor side effects of drugs (hepatotoxicity, vision problems)
- Motivate regular follow-up and sputum tests

Q19. Asthma (5 Marks)

Definition:

Asthma is a chronic inflammatory disease of the airways in the lungs. It causes the airways to become narrow, swollen, and produce extra mucus, leading to difficulty in breathing.

Causes / Triggers:

- Allergens: pollen, dust mites, animal dander
- Pollution and smoke
- Cold air
- Exercise (exercise-induced asthma)
- Respiratory infections
- Stress and strong emotions

- Certain medications (aspirin, NSAIDs)
- Occupational exposure (chemicals, fumes)

Signs & Symptoms:

- Wheezing (whistling sound while breathing)
- Shortness of breath
- Chest tightness
- Coughing (especially at night or early morning)
- Increased breathing rate
- Difficulty in speaking (in severe cases)

Types:

1. Intermittent asthma
2. Mild persistent asthma
3. Moderate persistent asthma
4. Severe persistent asthma

Management:

Medical:

- **Bronchodilators** (e.g., Salbutamol) – relieve symptoms
- **Inhaled corticosteroids** (e.g., Budesonide) – reduce inflammation
- Leukotriene modifiers (e.g., Montelukast)
- Oxygen therapy in severe attacks

Nursing Care:

- Assess respiratory rate, breath sounds, and oxygen saturation
- Administer medications as prescribed (usually via inhaler/nebulizer)
- Teach correct use of inhalers and spacers
- Identify and avoid triggers

- Encourage regular follow-up and peak flow monitoring
- Educate patient and family about emergency signs (severe breathlessness, cyanosis)

Q20. Otitis Media (5 Marks)

● Definition:

Otitis Media is the inflammation or infection of the middle ear. It is most common in children and can be acute or chronic, often caused by bacteria or viruses.

● Types:

1. **Acute Otitis Media (AOM):** Sudden infection with pain and fever
2. **Otitis Media with Effusion (OME):** Fluid buildup without infection
3. **Chronic Otitis Media:** Persistent or recurring infection, may cause ear damage

● Causes:

- Bacterial infections: *Streptococcus pneumoniae*, *Haemophilus influenzae*
- Viral infections: cold or respiratory viruses
- Blocked Eustachian tube due to cold, sinusitis, allergies
- Bottle feeding in lying position (in infants)

● Signs & Symptoms:

- Ear pain (otalgia)
- Fever
- Hearing loss
- Irritability in children
- Fluid/pus drainage from ear (if eardrum bursts)
- Fullness or pressure in the ear
- Trouble sleeping
- Loss of appetite (in infants)

Management:

Medical:

- Antibiotics (if bacterial cause suspected)
- Analgesics and antipyretics (e.g., paracetamol)
- Nasal decongestants (if Eustachian tube is blocked)

Surgical:

- Myringotomy (incision in eardrum to drain fluid)
- Tympanostomy tube insertion for recurrent cases

Nursing Care:

- Relieve pain and fever with prescribed medications
- Keep ear clean and dry (no water entry)
- Educate parents about completing antibiotic course
- Encourage breastfeeding and proper feeding position
- Monitor hearing and speech development in children

Topic 21: Epilepsy

Definition:

Epilepsy is a **neurological disorder** characterized by **recurrent, unprovoked seizures** due to abnormal electrical activity in the brain.

Causes:

1. **Genetic factors**
2. **Head trauma or brain injury**
3. **Stroke**
4. **Brain infections** (e.g., meningitis, encephalitis)
5. **Tumors**
6. **Developmental disorders** (e.g., autism, neurofibromatosis)

7. **Idiopathic** (unknown cause)

◆ **Types of Seizures:**

1. **Generalized seizures** – affect both brain hemispheres
 - Tonic-clonic (grand mal)
 - Absence (petit mal)
 - Myoclonic
 - Atonic
2. **Focal (partial) seizures** – affect one part of the brain
 - Simple focal (conscious)
 - Complex focal (impaired awareness)

◆ **Signs & Symptoms:**

- Temporary confusion
- Staring spells
- Uncontrolled jerking movements
- Loss of consciousness or awareness
- Psychological symptoms (fear, anxiety)

◆ **Diagnosis:**

- **EEG** (Electroencephalogram)
- **MRI/CT scan** (to detect brain abnormalities)
- Blood tests (for infections or electrolyte imbalance)
- Medical history

◆ **Management:**

📌 **Medical:**

- **Antiepileptic drugs (AEDs)** – e.g., phenytoin, carbamazepine, valproate

- **Surgery** – for drug-resistant epilepsy
- **Vagus nerve stimulation**
- **Ketogenic diet** – especially in children

Nursing Care:

- Maintain a **safe environment** (padded side rails, avoid sharp objects)
- Place the patient in a **side-lying position** during a seizure
- **Do not restrain** movements or put anything in the mouth
- **Time the seizure** and observe features (onset, duration, behavior)
- Provide **emotional support** and education to patient/family

Patient Education:

- Take medications regularly
- Avoid seizure triggers (lack of sleep, stress, flashing lights)
- Wear a **medical alert bracelet**
- Do not drive unless seizure-free for a specific period (as per local laws)

Topic 22: Otosclerosis

Definition:

Otosclerosis is an **abnormal bone growth in the middle ear**, especially around the **stapes bone**, which leads to **progressive hearing loss**.

Causes:

- **Genetic (hereditary)** – most common
- Hormonal changes (e.g., during pregnancy)
- **Viral infections** (e.g., measles)
- **Autoimmune response**
- More common in **females** and people aged **15–45 years**

◆ Pathophysiology:

The stapes bone in the middle ear becomes fixed due to abnormal bone remodeling. This prevents it from vibrating properly, causing **conductive hearing loss**. In advanced cases, sensorineural hearing loss may also occur.

◆ Signs & Symptoms:

- Gradual **hearing loss** (conductive or mixed)
- **Tinnitus** (ringing in the ears)
- **Vertigo** (less common)
- Difficulty hearing **low-pitched** sounds
- Hearing may temporarily improve in noisy environments (Paracusis Willisii)

◆ Diagnosis:

- **Otoscopy** – usually normal
- **Audiometry** – shows conductive hearing loss
- **Tympanometry**
- **CT scan** – detects bony changes in the ear

◆ Management:

📌 Medical:

- **Hearing aids** – helpful in early stages
- **Sodium fluoride** – may slow progression (controversial)

📌 Surgical:

- **Stapedectomy** – removal of the stapes bone and replacement with a prosthesis
- **Stapedotomy** – creating a hole in the stapes footplate and placing a prosthesis

📌 Nursing Care:

- Pre-op: Explain procedure, reduce anxiety, check hearing tests

- Post-op:
 - Keep the patient **flat** with the **operated ear upward**
 - Avoid coughing, sneezing, or blowing nose forcefully
 - Monitor for signs of infection or **vertigo**
 - Instruct the patient to avoid water entering the ear
 - Advise **no air travel** or lifting heavy objects for a few weeks

◆ Patient Education:

- Use prescribed **hearing aids** as needed
- Follow up regularly with the ENT specialist
- Protect ears from trauma or loud noises
- Report symptoms like dizziness, ear discharge, or worsening hearing

Topic 23: Ototoxicity

◆ Definition:

Ototoxicity refers to **damage to the inner ear (cochlea or vestibular system)** caused by **toxic effects of certain medications or chemicals**, resulting in **hearing loss, tinnitus, or balance problems**.

◆ Causes (Ototoxic Drugs):

📌 Antibiotics:

- **Aminoglycosides** (e.g., gentamicin, tobramycin, amikacin)
- Erythromycin
- Vancomycin

📌 Diuretics:

- **Loop diuretics** (e.g., furosemide, bumetanide)

📌 Anticancer drugs:

- **Cisplatin**
- Carboplatin

Others:

- Quinine
- Aspirin (high doses)
- NSAIDs

Signs & Symptoms:

Cochlear Damage (Hearing):

- Hearing loss (usually **bilateral** and **sensorineural**)
- Tinnitus (ringing in the ears)

Vestibular Damage (Balance):

- Dizziness or vertigo
- Imbalance, especially in the dark
- Nausea/vomiting

Risk Factors:

- High drug dose or prolonged use
- Pre-existing kidney disease
- Very young or elderly age
- Use of multiple ototoxic drugs
- Genetic predisposition

Diagnosis:

- **Audiometry** (baseline and follow-up tests)
- **Vestibular function tests**
- Patient history and drug review

◆ Management:

📌 Prevention:

- Use **lowest effective dose** of ototoxic drugs
- Regular **hearing tests** for patients on high-risk medications
- Monitor **renal function**
- Avoid combining multiple ototoxic drugs

📌 Treatment:

- Discontinue or adjust the offending drug (if possible)
- **Symptomatic management** (e.g., hearing aids, vestibular rehab)
- Referral to audiologist or ENT specialist

◆ Nursing Care:

- Monitor for early signs of hearing or balance issues
- Educate patients on reporting symptoms like ringing in ears or dizziness
- Keep accurate **records of drug dosage and duration**
- Coordinate with the medical team for early intervention

◆ Definition:

Disaster Management refers to the **organized efforts to prepare for, respond to, and recover from disasters**, whether **natural** or **man-made**, to reduce their impact on human lives, property, and the environment.

◆ Types of Disasters:

✅ Natural Disasters:

- Earthquakes
- Floods

- Cyclones
- Tsunamis
- Droughts
- Landslides

✓ **Man-Made Disasters:**

- Industrial accidents (chemical leaks, fires)
- Nuclear accidents
- Wars and terrorism
- Transportation accidents
- Biological and chemical warfare
- Epidemics and pandemics (e.g., COVID-19)

◆ **Phases of Disaster Management:**

1. **Mitigation:**
Actions to prevent or reduce the impact (e.g., building codes, flood barriers)
2. **Preparedness:**
Planning and training (e.g., drills, emergency kits, evacuation plans)
3. **Response:**
Immediate action after disaster (e.g., rescue, medical aid, firefighting)
4. **Recovery:**
Long-term rebuilding (e.g., rehabilitation, rebuilding infrastructure, mental health support)

◆ **Disaster Management Cycle Diagram (Optional in Notes):**

Mitigation → Preparedness → Response → Recovery → Mitigation (cyclical)

◆ **Roles of Health Workers / Nurses in Disaster Management:**

- **Triage:** Sorting patients by urgency
- Providing **first aid and emergency care**
- **Infection control** and hygiene
- Assisting in **evacuation and shelter**

- **Psychological support** to victims
- Keeping **records and reporting**
- Educating the community on disaster preparedness

◆ **Disaster Management Authorities (India):**

- **NDMA** – National Disaster Management Authority
- **SDMA** – State Disaster Management Authority
- **NDRF** – National Disaster Response Force
- **Local authorities**, NGOs, and international agencies also play roles.

◆ **Important Points:**

- Always be aware of **local disaster risks**
- Keep **emergency contact numbers** ready
- Maintain a **basic emergency kit** (food, water, medicines, flashlight)
- Stay updated through **official news or alerts**