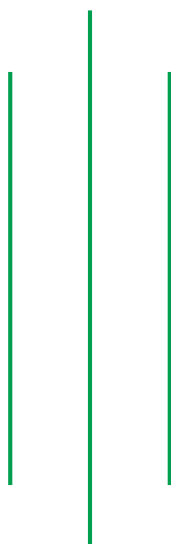


Syllabus for Licensing Examination of Diploma In Operation Theatre Technology 2021



Nepal Health Professional Council

Bansbari, Kathmandu

Table of Content

S.N.	Subjects	Marks
1.	Anatomy & Physiology	10%
2.	Biochemistry, Pharmacology & Microbiology	15%
3.	Fundamentals of OT Tech. Anesthesia	40%
4.	Basic Concepts of Surgery, Operative procedure	35%
	Total	100%

1. Anatomy And Physiology

A. Anatomy

- Introduction to Anatomical terms, organisation of the body, cell, tissues and regions.
- A brief knowledge of various organs of the following systems of the Body: G.I.T., Respiratory System, Excretory System, Genital System, Endocrine glands and special senses. Nervous system, Lymphatic System, Skeletal System

B. Physiology

Functions: Muscular System, Nervous System, Cardio-vascular System, Respiratory System, Digestive System, Excretory System, Endocrine System, Reproductive System,

2. Biochemistry, Pharmacology And Microbiology

Biochemistry

- Definition of Biochemistry and its scope, Electrolytes
- Digestion and absorption of carbohydrates, Maintenance of normal blood glucose level and factors regulating blood glucose level. Formation of urea and creatinine.
- Tests for detection of sugar, urea, creatinine, protein in blood and urine ➤ Renal function tests, Normal range of constituents, Factors maintaining pH of blood
- Serum electrolyte levels, Renal Function Tests: Normal physical characteristics of urine
- Chemical composition of urine and their significance, Analysis of abnormal urine

Pharmacology

Introduction: Brief history of Materia Medica, Drug Standards and laws, Dosage of drugs, Dose – Minimal, Maximum, Toxic and lethal. Idiosyncrasy, Hyper sensitivity Sites of Drug Action: Local, Systemic, Routes of Drug Administration

Chemotherapeutics of some common Drugs: Analgesics, Antiseptics, Disinfectants, Antibiotics, Tranquillizers, Sulfonamides, Anaesthetics (local & General in detail)

Microbiology

Sterilization and disinfection, Bacteriology - classification, morphology of bacteria, method & rate of reproduction of bacteria, Immunity, Common diseases caused by different types of organisms. Staph, Strepto, Diphtheria, C. tetanus, and welchii, Anthrax, Mycobacterium tuberculosis, M. leprae. E. coli, Salmonella, Shigella, Vibrio, Pseudomonas (Candida cryptococcus), Virology - Hepatitis, HIV, Herpes etc. Nosocomial Infections Universal precautions, Waste disposal

3. Fundamentals of O.T. Technique And Basic Concepts In Surgery

Fundamentals of O.T. Technique

1. Introduction to Learners .
Modern Surgery, Professional Nursing, Technical Nursing, correction of theory & practice. The Learners, objectives of learning, the chemical instructor, expected behaviour of or Nursing personnel, Necessity for standardized procedures & Techniques Credentially .
2. Health care Team
Team concept Dependence of patient on or Team, sterile team members, unscrubbed team members, Direct patients care team is part of department, Nursing administrative personnel, staff nursery personnel Team work.
3. The patient
Patient centered care, the patient basic needs, patient reaction to illness, Patient regrets, patient physician relationship, acceptance of operation, patients with special needs, preparation of all patients for surgery, teamwork.
4. Pre-operative Nursing
Pre-operative role, standards of pre-operative nursing practice, preoperative assessment, pre-operative planning, pre and intra operative implementation, intra and post operative evaluation.
5. Physical facilities at operation theatre
Physical layout or exchange areas, peripheral support areas or room.
6. Asepsis, infection control & principles of sterile technique.
Historical introduction, surgical conscience, definition, infection, source of contamination, infection control, environmental control need for sterile technique, principles of sterile technique and illustrations of application recommended practicals, prevention of infection.
7. Sterilization and disinfection
Bioburden, Microbiological safety, parameters of sterilization, Methods of sterilization, control measures like Disinfection, Concept of Central Sterile Supply Department (CSSD)
8. Surgical Scrubs, gowning and gloving
Historical introduction of asepsis, the surgical scrubs, gowning and gloving.
9. Division of Duties, set up, procedure clean up.
Preliminary preparation, diversion of duties, scrub nurse, circulating nurse, sponge, sharp instruments counts, Room clean up procedure after surgery – Daily cleaning after schedule is completed – Weekly/ monthly Cleaning.
10. Economy, work simplification & Safety.
Efficiency of or staff, time and motion economy, Economical use of supplies and equipment . pros & cons of disposables, Care and handling of instruments, Electrical hazards and safeguards, Radiation hazards and safeguards
11. Manifold room concept, Supply of gases, Vacuum suction, Scavenging gases
12. Various types of cautery and precautions in using cautery, Harmonic scalpel.
13. Preservation of specimens to be sent for Histopathology, Microbiology.

Anesthesia And Allied Topics

1. Anesthesia

Introduction Definition pain pre medication .choice of anesthesia Anestheticstate, knowledge of anesthetics, types of anesthesia O. A..Care Of anesthetized patient. Neuromuscular blockers, balanced anesthesia, local Or regional anesthesia S A, Epi anesthesia local anesthetic agents, drug interaction, Cryoanesthesia, induced hypothermia/induced hypotension, accupuntureanesthesia in neonates and elderly, care of anesthesia equipment.

Occupational hazards among of personnel.

Complication of Anesthesia

1. Drugs: Anesthetic drugs
Analgesic narcotic / non narcotic
Steroids
Bronchodilators
Anti histamines
Vasopressors
Vasodilators
Cardio mimetic drugs
Antiarrhythmic drugs
3. C. P. R
4. Fluids: Venous access. Camilers, Administration set, Crystalloids Colloids,
5. Blood Transfusion: Blood group, Cross matching Compatibility, collection and storage of blood, incompatibility, blood transfusion reaction.
6. Medico legal aspects of anesthesia and surgical procedures
7. Liability and Accountability .
Historical evolution, liability, accountability. patient safety programs Employee safety programs.
8. Realities: Realities shock. eustren v s Destress. Electrical Dilemmas, Clinical competence.

4. Basic Concepts In Surgery

1. Ambulatory Surgery

Ambulatory surgical care facility, the ambulatory surgical patient, Patient nurse relationship, intra operative care, Recovery, Discharge and follow up. Advantages of ambulatory surgery .

2. Pre operative care.

Introduction pre operative room, receiving patients & identification, Care of pre -operative patient, Check list

3 Patient Monitoring, potential complications and CPR:

Monitoring of vital function s, complications of operations, CPR..

4. Positions

Preliminary consideration, criteria for positioning, equipment for position, operative positions, patient as individual. Awareness of risks Involved in various positions

5. Preparation of operative site and draping.

Preparation of patient prior to surgery Nasogastric intubation urinary Tract catheterization, skin preparation, patients skin preparation on O R table Draping plastic isolation.

6. Wound management and methods of haemostasis .

History of wound management, mechanism of wound healing, Factors influencing wound healing mechanism of haemostasis, Methods of haemostasis.

7. Wound closure material.

Sutures, surgical needles, common suturing techniques, Surgeon's Choice of sutures and needles, packaging and preparing surgical staples, tissue adhesives, tissue repair materials, tissue replacement materials, skin closure, drug and medical advice, legislation.

8 State of Art technology.

Specialised surgical tools Electro surgery, Laser surgery, endoscopy, microsurgery.

9 Diagnostic procedures .

Radiology, Ultrasoundography, endoscopy, Plethsmography, Sensory evolved potential MIR .

10. Concepts of laproscopic surgery.

11. Techniques of scrubbing, Wearing sterile gown & Gloves.

Techniques of draping.

Techniques of O R Cleaning, Sterilization.

Sterilization of O R instruments and equipment

Packing linen/instruments. For Sterilization.

Flash Sterilization.

Operative Procedures

General Surgery

Introduction, special features of gen. surgery, neck procedures, breast procedures, abdominal incision, biliary tract procedures, liver procedures, splenic procedures, pancreatic procedures, esophageal procedures, gastric procedures, intestinal procedures, colorectal and anorectal procedures, hernia, amputation of extremities.

Gynecology and obstetrics

Introduction, gynecology, diagnostic techniques, vulvar procedures, vaginal procedures, abdominal procedures, obstetrics.

Orthopedics

Development of orthopedics, special features of orthopaedic surgery, extremities, fractures, joint reconstruction, replacement, repairs of tendons and ligaments, vertebral column, cast application.

Ophthalmology

Introduction, the eye, ocular, operative procedures, eyelid and adnexal procedures trauma to the eye, general considerations.

Otolaryngology

Introduction, the ear, otologic operative procedures, microscopic surgeries, the nose, nasal operative procedures, oral cavity and throat operative procedures. The needle operative procedures on the larynx, trachea, bronchus, esophagus, gen consideration in ENT procedures.

Plastic and reconstructive surgery

Development of plastic surgery, psychological support for plastic surgery patient, special features of plastic surgery, grafting techniques, reconstructive plastic surgical procedures, burns, cosmetic surgery.

Pediatric surgery

Introduction, pediatric surgeries, general considerations, pediatric patient, pediatric anesthesia or nursing procedures, common operation, special features of pediatric surgery and fetal surgery.

Cardiac surgery

Development and introduction, heart and great vessels, closed heart surgeries, open heart surgeries, special features of cardiac surgery, Diagnostic procedures, cardiac catheterization and angioplastic surgery.

Peripheral vascular surgery

Introduction, peripheral vascular system, conservation therapy, special features of peripheral vascular surgery, peripheral vascular operations.

Thoracic surgery

Historical development, diagnostic procedures, bronchoscopy, thoracoscopy, mediastinoscopy, minor thoracic procedures ICD, thoracic incisions and closures, thoracic operative procedures, chest trauma, intrathoracic esophageal procedures.

Urology

Introduction, urologic endoscopy and procedures, special features, special features of urologic surgery, common operations in the urinary tract, operation on male reproductive organ.

Transplantation

Introduction, types of transplant, tissue transplantation, organ transplantation, microvascular reimplantation procedures.

Oncology

Definition, treatment and prognosis of cancer, operative resection, radio therapy, chemotherapy, immunotherapy, surgical procedures.

Neurosurgery

Introduction, neurosurgical disorders, diagnostic procedures, burr hole, cranial surgery, special considerations in neurosurgery, spinal surgery, peripheral nerve surgery.

Multidisciplinary team approach to head and neck surgery.

Introduction, patient self image, the face, operative procedures on the face, oral cavity, operative procedure of neck, gen. consideration

Potential complication in surgical patients

Introduction, pulmonary complication CVS complication, shock, hemorrhage, DIC, post oper wound infection, wound disruption, complication of abdominal surgery, renal complications, electrolyte imbalance.

Laparoscopic surgery

Introduction, equipment, laparoscopic surgical procedures.

Practicals

- i. Washing instruments & use of ultrasonic bath
- ii. Instruments for various surgeries and identification of instruments.
- iii. Anesthetic equipment and identification of the same.
- iv. Handling of the sophisticated equipment (anesthetic & surgical).
- v. Disposal of wastes from OT
- vi. Positioning of patient for anesthesia and various surgical procedures.
- vii. Handling of various sterile material during operative procedures.
- viii. Sterilization of laparoscopic & endoscopic instruments.