STATE COUNCIL OF MEDICAL SCIENCES ODISHA

CERTIFIED OT TECHNICIAN (COTT)

Syllabus

CERTIFIED OT TECHNICIAN

(Duration of Course – One Year)

Learning Objectives

At the end of the course, the student should be able to:

1. Support and work as a link between OT Sisters and Doctor in OT
2. Prepare the OT prior to surgery, including Anesthesia preparation and Surgical Preparation.
3. Sterilise the OT and instruments
4. Assist the Anaesthesist in delivering General Anesthesia and Regional Anesthesia
5. Assist in common Surgeries as first assistant in emergency.
6. Perform basic nursing procedures like IV Catheterisation, RT insertion, Nebulisation, Oxygen therapy, Injections.
7. Monitor the patient in pre-operative and post-operative room.
8. Perform Cardio-pulmonary resuscitation.
9. Use a defibrillator correctly during Cardio-pulmonary resuscitation.
10. Use basic monitors, equipments and C-arm in OT.
11. Maintain basic monitors, equipments and C-arm in OT.
12. Maintain all OT records in a proper way.
13. Assist in Blood transfusion therapy.
14. Able to monitor the patient during Blood transfusion.
15. Carry out all steps as per check list before & after surgery.
16. Provide psychological support to the patient.
17. Counsel patients' relatives.
18. Manage common accidents and untoward incidences in OT.
19. Perform different injection techniques commonly used in OT .
20. Describe common emergency drugs used in the OT.

CERTIFIED OT TECHNICIAN (ONE YEAR)

COURSE CURRICULUM

Sl. No.	Subject	1st Quarter		Internal Assessment	Subject	2nd Quarter		Internal Assessment	Subject	3rd Quarter		Annual Board Examination
		Th	Pract/ Demo			Th	Pract/ Demo			Th	Pract/ Demo	
1	Basic Sciences	12	18		Introduction to anesthesia	20	20		Role of technician in Casualty	12	10	
2	Microbiology and sterilization	12	18		Medical and surgical nursing	12	23		OT equipments and their maintenance	0	10	
3	Introduction to Operation theatre techniques	13	22		OT related consumables & record keeping	14	0		Resuscitation and Recent advances in OT technology	6	5	
	Total	37	58		Total	46	43		Total	18	25	

Rotational Postings – In addition to rotational posting the OT students must be rotated through oxygen bank, autoclave rooms, and biomedical waste department. Students of 1st Quarter & 2nd Quarter will rotate in various operation theatres from 9 am to 12.00 noon daily as follows:

Rotational Postings in each quarter:

Sl. No.	Department	Days
1	ENT	10
2	Obstetrics & Gynecology	15
3	General / GI Surgery and Emergency/anesthesia	20
4	Ophthalmology	10
5	Orthopaedics	15
6	Other, Blood Bank	10
7	Casualty posting	10
	Total	**90**

Rotational Posting : 3rd Quarter students will have posting in casualty, Medicine ICU, Burns Unit, Trauma ICU, Trauma OT and Superspeciality OT for Practical Training. Rotational posting of 10 days as following :

1. Burns
2. Paediatric Surgery
3. Plastic Surgery
4. Neurosurgery
5. Urosurgery
6. CTVS
7. MICU/TICU
8. Trauma/Casualty/Pain Clinic
9. Labour Room

Examination Marking System

Board Examination	**70 Marks (Only Theory)**
Internal Assessment	**30 Marks (Theory + Practical)**
Total	**100 Marks**
Pass	**50 Marks**

1st Quarter(90working Days)

Paper – I
(Basic Sciences)

Sl. No.	Topics	Lecture Hour	Demo/Practical
1	Introduction to human body as a whole Must know: gross Anatomy of Human body and part names and list of systems.	1	1
2	Applied Anatomy & Physiology of CVS, Respiratory system, Applied aspect of Autonomous nervous system	1	-
3	Study of cell, its functions , study of tissues Must know: detailed cell structure, type of cells, characteristic of cells, names of tissues & functions.	1	1
4	Blood cells, groups, transfusion reactions. Must know: types of blood cells , their functions, their total count in blood, blood composition details, their measurements. Blood Group: Type, Rh typing, Rh incompatibility. How to check Blood pint on arrived before transfusion? Transfusion reactions Monitoring during B.T Identification of transfusion reaction and immediate measures	1	2
5	Joints and their types, names (eg. Elbow, hip etc.)	**1**	**1**
6	Muscles- Identification of major groups related to applied anatomy, Must know: Only identification of major groups, Importance in applied Anatomy (IM injection)	**1**	**2**
7	Pulse- rate, rhythm, volume Must know: Normal Pulse , characteristics of pulse Abnormal Pules Rhythm - Identification All peripheral sites for pulse palpation	**1**	**1**
8	Blood pressure- how to measure, normal and abnormal Must know: What is normal range ? What is abnormal ? How to measure BP, which are sites for it ?	**1**	**1**
9	GIT (oesophagus, stomach, small and large intestines, liver, gall bladder, pancreas)and functions. Must know: Parts of each GIT organ, functions of each organ.	**1**	**2**
10	Sense organs (Brief anatomy of eye, nose, ear, skin	**1**	**2**

	related to sensations). Must know: Anatomy and function of each.		
11	Respiratory system- nose, pharynx, trachea, bronchi lungs Must know: Detail structure of parts , function	**1**	**2**
12	Cardio vascular system- heart (chambers, valves, aorta, vena cava), artery and veins identification. Must know: Name of parts, names of major arteries and veins with respect to clinical application. What is ABG, From where sample taken for ABG, Care during ABG	**1**	**2**
13	Kidney- ureter, bladder, urethra Must know: Name/structure, function.	**1**	**1**
	Total	**12**	**18**

Paper – II
(Microbiology and sterilization)

Sl. No.	Topics	Lecture Hour	Demo/Practical
1	Common types of bacteria, their characteristics, Must know: What are the common bacteria causing diseases in human being?	1	-
2	Bacteria- Mode of spread and effects. Must know: Routes of transmission, diseases caused, prevention.	1	-
3	Principles of asepsis, disinfection and prevention of cross infection. Must know: What is decontamination/disinfection/fumigation? Methods of preventing cross infection.	1	1
4	Common antiseptics used in operation theatre. Must know: What is sprit / betadine / ethanol / Lysol / savlon / Cidex / Na Hypochlorite solution? How to use ? How to Prepare? Where to use ? After how many days to change the solution. % of solution	1	2
5	Preparation of antiseptic solution in common use in operation theatre. Must know: How to prepare each solution for specific use in OT eg. scopes cleaning? tubes? instruments? Mask?	1	2
6	Sterilizers- Must know Component parts, names, care, What are the thing that are sterilized in it?	1	1
7	Sterilizers- Must know Principles of working,care and maintenance - How do Sterilizers work- time / temp / pressure; Procedure before sterilization ; Care after sterilization ; Maintenance of sterilizer	1	2
8	Methods of sterilization of operation theatre, Must know: Fumigation procedure, Fogger methodology – time, checking of sterilization, record keeping, lysolying	1	1

9	Procedure of collection of swabs in OT after fumigation. Must know: How to collect swab, how to transport, labeling, record keeping, informing to OT people, which all sites are for sample collection? How many samples ?How frequently done ?	1	3
10	Sterilization of blunt and sharp instruments, rubber material, gloves, polythene tubes, dressings, gum elastic equipment, sutures, ligatures, surgical cautery and other electric instruments and linen used in operation theatre Principal of cleaning of Instruments Gen/Lap/cable's/monitors/Endoscopes. Sterilization of endoscopic/laparoscopic instruments. Procedure of sterility test. Collection and dispatch of samples for sterility. Must know: How to collect, from which sites, how to dispatch samples for sterility.	1	3
11	Running of Central sterile supply room (Autoclave, flash, ETO) Must know: What is CSSD/ ETO / Flash? What is detailed technology ? Record keeping. Pre procedure, post procedure protocol . How to confirm test for sterilization ? .Temp, pressure, time ? CSSD .ETO- Care during use	1	2
12	Bio medical waste- colour code, needle destruction, personnel care, Biosafety	1	1
	Total	**12**	**18**

Paper – III
(Introduction to Operation theatre techniques)

Sl. No.	Topics	Lecture Hour	Demo/Practical
1	Introduction to OT Must know: What are various zones /areas / layout in OT ? What is importance of each zone ?	2	1
2	Identification and demonstration of various equipments in OT	2	1
3	Pre procedure protocols (Check list)	2	1
4	Consent & its Medico legal aspects Must know: Definition , Types Contents – Surgery / Blood transfusion / Anaesthesia Importance When RMO / Superintendent / parents consent needed ? What about minor / unconscious / MLC cases ?	2	1
5	Cleanliness and sterilization of operation theatre.	1	1
6	Helping surgeons and others to wash up and drape for operation.	-	1
7	Handling of sterilized articles.	-	1
8	Washing, cleaning, testing and repairing of gloves and preparing them for sterilization and packing.	-	1

9	Preparation of dressings, swabs and packs.	-	1
10	Packing of drums for sterilisation.	-	1
11	Use, care, maintenance and sterilisation of common types of instruments, needles, sutures and ligatures used in operation theatres.	-	1
12	Procedure for sending specimen for biopsy, and aspirated fluid for culture.	1	1
13	Identification of instruments, Lay out of instruments trolley,	-	1
14	Operative and nursing procedures connected with common surgical operations such as assisting for biopsies, debridement of bedsores, incision of abscess, carbuncles, excision of sebaceous cyst, corns, warts, ulcers, in growing nails, foreign body, rectal operations like piles, fistula, fissure, ischiorectal abscess,	2	1
15	Application of bandages, dressings, tourniquets.	-	1
16	Reception and preparation of patients for surgery,	-	1
17	Observation of patients during operation, post operative period.	-	1
18	Methods of application and uses of different types of splints.	-	1
19	Plaster of Paris techniques, preparation, application and removal.	-	1
20	Universal safety precautions	-	1
21	X ray shooting, basic views (PA view and Lateral chest,), Operating C-arm	-	1
22	Disposal of Biomedical waste	1	-
23	Preparation of Electronic gadgets for Run. (Laparoscope, Cautery work station, cable connections)	-	1
	Total	**13**	**22**

2nd Quarter(90working Days)

Paper – I
(Introduction to anesthesia)

Sl. No.	Topics	Lecture Hour	Demo/Practical
1	Introduction to anaesthesia Must know: Lay out of OT e.g. sterile and unsterile zones, pre and post-operative rooms, autoclave room, washing area, dirty area and area for setting up of trolleys. Importance of monitoring central supply of Oxygen, N2O, air compressor and suction machine . Knowledge of portable cylinders	1	0
2	Pre procedure protocols Must know: Checking that OT lists are available or not. Record keeping of OT list, helping the OT staff to set up	1	1

	preoperative room with beds, mattresses, linen, Oxygen source, suction machine, IV stands, Anesthesia machine, emergency drugs, IV fluids and airway trolley. Check the correctness of patients' names, age, address, type of surgery and consent for surgery.		
3	Identification and use of anaesthesia resuscitation equipments available on trolley. (Ambu bag, endotracheal tubes size, tracheostomy tray) Must know: Identification of Ambu bag, endotracheal tubes of various types and sizes, tracheostomy tubes and tray, nasal and oropharyngeal airways and their sizes, laryngoscopes with different types of blades, stylets, connectors, bougies and supraglottic airway devices. Proper cleaning and storage of the above.	1	1
4	Description and working of machines and appliances used for anaesthesia like Boyle's machine, airway, endotracheal tubes, laryngoscopes etc. Must know: • Setting a difficult airway cart, crash cart, spinal and epidural tray. • Daily checking of anesthesia workstations, monitors, defibrillators, ventilators and suction machines. • Complete knowledge of Alarms and an essential practice to respond immediately to low saturation, low pressure, high pressure alarms and disconnection alarms is a must.	1	1
5	Their component parts, cleaning, sterilization, care, maintenance, assembly and dismantling. Must know: • Fiber-optic bronchoscope, sharps, rubber items, PVC items, metallic and hollow items to clean in the specified manner • Similarly, electrical items, disposables, bougies and monitor cables be handled in the prescribed manner. • Practice of enlisting the components on the box or container during storage.	1	1
6	Drugs in anaesthesia- premedication (oxygen, Glycopyrrolate, atropine, ondansetron, ranitidine, midazolam, pentazocine, fentanyl, diclofenac) Basic Pharmacolos Must know: salient features like class of the drug and uses Inducing drugs- (Propofol, Thiopentone Na, Ketamine) Muscle relaxants- identification, use, contra indication	1	-
7	Brief awareness about special anaesthesia like paediatric and geriatric anaesthesia. Must know: • Special requirements for anesthesia in above cases. • Warm OT, small size splints for IV, IVlines, boulsters of proper size, proper size head rings and pillows for	-	1

	Pediatric cases; • Careful and gradual positioning of Obstetric and Geriatric patients with wedges and paddings at pressure points.		
8	Types of anaesthesia. (Local, sedation, spinal, epidural, general, regional blocks) Must know: • Names of cases which require various types of anesthesia. • Importance of preparation of OT in a complete sense even for minor cases to avoid mishaps. • Preparation of OT according to specific case wise requirement in Major cases .	1	1
9	Local anaesthetics (Lignocaine, Bupivacaine) Must know: Various types of Lignocaine and Bupivacaine marketed as 1%, 2%, 4%, 5%, 10% etc. • Various dilutions and percentages. • Importance of reading labels and preparing drugs after proper and correct labelling methods as adopted by the treating Anesthesiologist. • Knowledge of operating syringe pumps.	1	1
10	Pre anesthetic evaluation, consent for surgery-anaesthesia. Must know: • Any patient coming to OT for elective procedure should be entered on OT list. Such cases need to be previously evaluated by the Anesthesiologists. • Practice to check pre- anesthesia notes are attached to the case paper. • Check the correctness of patients' names, age, address, type of surgery and consent for surgery. Check preoperative blood investigations are available, check entry of figures in the computer. • Check entry of anesthesia and surgeons' names in computer. • Check availability of all concerned forms to case paper like registration number, MRD number, Rajeev Gandhi scheme entry criteria. • Check MLC number, Consent from Medical Superintendent of Mental Hospital in case mental patient is operated. Also consent from jail authority if a prisoner is getting operated.	1	1
11	Local and sedation- Preparation, position of patient, required drugs, doses, side effects. Must know: • Check for OPD/IPD numbers and papers. See if surgery is advised on paper. • Check NBM status, accompanying persons present or not. • Patient positioning as per Surgeon's advice. Arrange for arm-boards, leg-boards, back rests, stirrups, eye-pads	1	1

	and ear plugs. □ Set up monitors; ask for need for IV line. □ Arrange for required drugs as desired by the anesthetists. □ Monitor for vomiting, retching, flushing, rashes, itching etc.		
12	Spinal anaesthesia- Preparation, position of patient, required drugs, doses, side effects. Must know: □ Confirm NBM, consent, nature of surgery, patient name and surgery on OT list, IPD number and whether patient is accompanied with relatives or not. □ Position for spinal anesthesia. Make available agents used for part preparation. □ Provide sterile spinal tray. Teach about disposal of used items.	1	1
13	Epidural anaesthesia- Preparation, position of patient, required drugs, doses, side effects. Must know: □ Same as above for Epidural anesthesia. □ Contents of epidural set, sterilization and need to maintain epidural catheter for post-operative analgesia in recovery room.	1	2
	Regional blocks- Preparation, position of patient, required drugs, doses, side effects. Preparation of patient for regional anaesthesia.		
14	Preparation of patient for general anaesthesia. Must know: □ Confirm NBM, consent, nature of surgery, patient name and surgery on OT list, IPD number and whether patient is accompanied with relatives or not. □ Check for OPD/IPD numbers and papers. See if surgery is advised on paper. □ Check NBM status. Check availability of all concerned forms to case paper like registration number, MRD number, Rajeev Gandhi scheme entry criteria. □ Check MLC number, Consent from Medical Superintendent of Mental Hospital in case mental patient is operated. Also consent from jail authority if a prisoner is getting operated. □ Patient positioning as per Surgeon's advice. Arrange for arm-boards, leg-boards, back rests, stirrups, eye-pads and ear plugs. □ Set up monitors; ask for need for IV line. □ Arrange for required drugs as desired by the anesthetists. □ Teach about daily checking of anesthesia workstations, monitors, defibrillators, ventilators and suction machines. □ Complete knowledge of Alarms and an essential practice to respond immediately to low saturation, low pressure, high pressure alarms and disconnection alarms	1	1

	is a must.		
15	Lay out of trolley for all types of anaesthesia Safety Mechanisms of life saving equipments check list. Must know: □ Lessons about preparation of spinal trays, epidural tray and tray for various regional blocks. □ Knowledge of sterilization and disinfection. Information of disposal of used items.	1	1
16	Various types of gas cylinders- types, care and identification. (Oxygen, N2O, CO2) Must know: □ Color coding of various cylinders. □ Coding for change of cylinders on workstations and change of cylinders for central supply.	1	1
17	Central gas pipeline, Manifold system, Liquid O2, □ Teach about location and general arrangement of central gas pipelines. □ Show the locations of outlets at number of places as in wards, ICUs, Recovery rooms and Labor rooms. Information about need for regular checking from company personnel. □ Regular checking of supply to OT. Checking of integrity of alarms and pressures.	1	1
18	Central suction, electrical, foot suction. Must know: □ Clearing of airway of blood, mucus and vomitus and importance in saving life of patient. □ Importance of electrical and foot suction as alternatives to central suctioning system.	1	1
19	Explosion risks. Fire-fighting. Must know: □ Awareness about likelihood of fires and explosions in OT. □ Preparedness for any accidents due electrical equipment and autoclave etc. □ Assisting for CPCR	1	1
20	Assembly and use of Oxygen therapy units, anaesthesia equipments.	1	1
21	Maintenance of anaesthesia equipments, records and charts.	-	1
22	Role of OT technician in Post anaesthesia care. Must know: □ Confirm anesthesia and surgery notes. Check if post operative orders have been put on paper. □ Monitor vomiting, rashes, pulse, B.P., respiration, consciousness, effects of analgesia and pain medications if any. □ Need for oxygen supplementation if advised. Watch for blood transfusion reactions of any. Check if BT notes have been put.	1	-
	Total	**20**	**20**

Paper – II
(Medical and surgical nursing (Only preparation for procedures)

Sl. No.	Topics	Lecture Hour	Demo/Practical
1	Temperature, pulse, respiration recording Must know: • About skin and core temperature. Methods of measuring the same over 1 minute, with hand on pulse. • Method of cleaning the thermometer and wiping, before and after use. Storing dry after wiping with cetrimide lotion. • How to palpate various superficial pulses, radial, ulnar etc. • How to record pulse rate, rhythm, volume and nature of vessel wall; • For respiration, how to record rate, depth and nature of breathing, thoracic or abdomino-thoracic, labored or quiet and level of consciousness or change in color; if any such alteration from normalcy is noted.	1	1
2	Blood pressure recording Must know: • How to tie the B.P. cuff, location of brachial artery on medial side of cubital fossa and that cuff should encircle the two third circumference of the arm. • Various sizes of B.P. cuff for various age groups. • How cuff should be tied only on the portion of a limb where a single artery can be compressed against a single bone to obtain correct record. • Palpatory and auscultatory methods of recording B.P. • Different types of apparatus- sphygmomanometer, aneroid and digital B.P. records. • Normal range of B.P. and high and low values.	1	1
3	Care of mouth and skin. Giving bedpan and urinals. Must know: • Care of mouth and skin in ICU patients on prolonged ventilation. • Oral cavity as a source of organisms and a route cause of respiratory infections and generalized bacteraemia leading to increased morbidity and mortality. • How to maintain cleanliness of bedpan and urine pots to prevent ascending infections in the urinary system. • General instructions of sterile care to be followed about the storage of airways, endotracheal tubes, urinary catheters, syringes etc. • Importance of oral wash with hexidine, skin care with frequent change of position, padding of pressure points, dusting with antibacterial powders of body parts under creases.	-	1
4	Oxygen cylinders.	1	1

	Must know: • Recording the number of portable cylinders on OT and ICU. How to store cylinders in horizontal manner when not in use. • Practice of checking FULL label when receiving cylinders and putting label of EMPTY when exhausted. • Method to place large cylinders in a corner or in a transverse manner to avoid accidents in OT. • Store cylinders away from flammable things and always in a room with open windows so as to avoid casualties due to blast. • Read the name of gas in a cylinder before installing it on the machines to ensure correct placement.		
5	Administration of oxygen. Must know: • Need to supplement oxygen to patients under anesthesia or in ICU. • Equipment requirement for the same, like nasal cannula, Hudson mask, nasal prongs and catheters should be introduced. • How to read pressures in cylinders for ensuring uninterrupted flow. • How to check the integrity of tubings from cylinders up to the patients.	1	1
6	Care & preparation of an unconscious patient, Catheterization, Lumbar puncture, aspiration of abdominal cavity and chest. Must know: • Importance of oral wash with hexidine, skin care with frequent change of position, padding of pressure points, dusting with antibacterial powders of body parts under creases. • Need of betadine, gauze, sponge holders, dry gauze pieces, sterile catheter and lignocaine jelly in a tray for catheterization. • Lumbar puncture tray should contain hole towel, gauze pieces, sponge holders, LP needle, sample bulb and syringes. Tray should be autoclaved. • Patient positioning for lumbar puncture should be learnt with pillow under the shoulders, back at right angle to the bed and hip and knee joints flexed over the abdomen with chin touching the chest. • Head low position after L.P. should be ensured to avoid PDPH. • For aspiration of abdominal and chest cavity, painting with betadine and spirit and sterile draping is necessary. Availability of intercostal drain and underwater seal is to be confirmed. • Need to perform thorough hand washing and scrubbing before preparing the trolleys and trays is a must should also be taught.	1	2

	□ Knowledge about disposal after use is to be given.		
7	Passage of gastric tube. Giving fluids by mouth, Ryles tube. Enema. Must know: □ Which instructions to give to patients before performing the above. □ Giving fluids by mouth or RT should be written on case paper by doctors during rounds in ICU. □ To check for written instructions to do so on a case paper. □ To check whether volume and type to be given has been stated clearly on the paper.	-	1
8	Injections by various routes. Must know: □ How to prepare injection trays containing autoclaved or sterile syringes, needles of 20 to 25 gauges. □ Check labelsto confirm names of drugs contained and recheck the market names. □ Containers of spirit swabs are kept ready. □ Proper disposal of used sharps, syringes, IV sets, transfusion sets and blood stained gauze pieces should be taught. □ It is essential to check whether the medication has been prescribed by the doctor on the case paper. □ To monitor for response of the patient after medication.	-	2
9	Administration of medicine by oral and other routes. Must know: □ To strictly follow the orders on case sheet. □ About 12 hourly, 8 hourly, 6 hourly dosages where necessary. □ Monitoring for response of the patient after medication.	-	1
10	Nursing care during convulsions, poisoning, asphyxia and anaphylactic shock. Must know: □ Apparatus to secure airway in emergency should be ready. □ Suction machine, tracheostomy tray, suction catheters, endotracheal tubes, laryngoscopes, oral and nasopharyngeal airways and bite blocks should be made available immediately. □ Keeping ready Intracaths , IV sets, three ways, IV fluids, and drugs to control convulsions. □ To tilt the bed or table in head low position in case of vomiting due to poisoning. □ To secure patient on the bed or table to prevent bony and soft tissue injuries. □ Injection Adrenaline, hydrocortisone and dexamethasone should be available urgently for saving life.	1	2
11	Nursing care during infectious diseases like chicken	1	2

	pox, small pox, typhoid, pulmonary tuberculosis and other infectious diseases. Must know: □ How to use personal protective measures before attending patients of infectious disease. □ How to handle blood samples, urine, CSF, pleural fluid, peritoneal fluid and stool samples. □ How to keep record of improvement and/or deterioration of patient condition. □ How to dispose of fomites, swabs, gauze pieces, bandages in OT and ICU. □ Proper disposal of used sharps, syringes, IV sets, transfusion sets and blood stained gauze pieces should be taught. □ How to prevent cross- infection.		
12	Nursing care during common diseases like myocardial infarction, congestive cardiac failure, infective hepatitis, peptic ulcer, pneumonia etc. immunization. □ Importance and role of oxygen inhalation, propped up position, decongestants and availability of suction machine are life-saving. □ Monitoring of ECG, saturation, respiration, B.P. are mandatory. □ How to inform to the relatives about the seriousness of patient condition. Every day condition of the patient needs to be informed to the relatives. □ The importance of nebulization and physiotherapy if needed. □ How to explain if patient needs to be artificially ventilated.	1	2
13	Intake output chart Must know: □ How to prepare an ongoing chart about intake through IV and RT on day today basis. □ How to estimate output of patient from urine, stools, respiration, and sweating, pleural and peritoneal drains daily. □ How to record blood loss from pleural, peritoneal, p/v discharge, joint drains and serous discharge from burns .	-	1
14	Study of various blood groups, Method of Blood transfusion, Indication, hazards of blood transfusion Must know: □ ABO blood grouping system and Rh typing of blood. □ Standard universal color coding of blood groups. □ Cross-matching and need to recheck and documentation on paper. □ System of numbering of blood bags, registration number of patients and entry of dates of collection and supply of blood and blood product bags. □ Importance of checking the date of expiry. □ How to put entries on important papers during	1	2

	transfusion. Need to put the signature of the individual who initiates BT.
	  Importance of monitoring blood transfusion and how to identify reaction to incompatible blood.
	  Importance of reporting a transfusion reaction to concerned blood bank.		

15	Diabetes- Blood collection for blood sugar measurement, use of glucometer
	
	Must know:
	  Importance of checking previous blood sugar levels and whether patient is on oral or injectable hypoglycemic agents.
	  Significance of mandatory morning fasting blood sugar estimation .
	  To check that glucometer with its compatible glucostrips is available in OT for intermittent checking of sugar levels during surgery.
	  To wipe the pulp of finger tip of the hand to which no IV line has been started. Saline wipe and not spirit is used. Finger pulp is given a bold prick to obtain the sample.
	  To read from the screen the value and note on case paper for reference.
		1	1

16	Diet sheets/Chart.	1	1
17	Communication Skills & other soft Skills	1	1
	Total	**12**	**23**

Paper – III
(OT related consumables & record keeping)

Sl. No.	Topic	Lectur/Demo

1	Maintaining record and arranging & labeling drugs as per order.
	Must know:
	  How to prepare separate registers for entering drugs used in OT and ICU.
	  Date wise entry of drugs given as per dosages has to be charted.
	  Monthly count of all drugs is thus obtained and recorded.
	  Importance of stringent record keeping to aid in accounting, calculating hospital expenses, following the course of recovery of patients, prevent malpractices.
	  Usefulness of record keeping of drugs for patients for future record; it has medicolegal importance for the benefit of a hospital in case of any allegations.
		3

2	Record of disposables & inventory management Must know: Record of indenting and accounting under the head of opening balance, purchases, issue and closing balance.	2

	□ Record keeping is helpful for tallying of expenses. □ The importance of record keeping to anticipate the requirements in case hospital has to face mass casualty situations.	
3	Disposal of expired drugs Must know: □ Importance of keeping a record of disposables to know the stock as on date and thereby place requisition with suppliers. □ It is the duty of every responsible citizen to properly dispose all waste created. Disposal of types of waste is different and has to be followed by rules. □ Authentic record, that the rules of disposal are followed is to be maintained.	1
4	Information about registers related to drugs, record of equipments , working or not, AMC/CMC,daily maintenance Must know: □ Stock books are maintained to enlist the equipment in the department. For example, total number of monitors, ventilators, computers, printers etc. □ List of equipment in working condition with all its accessories labelled, is also important. □ Manufacturing companies take the responsibility of maintenance by accepting AMC or maintenance by comprehensive plan. □ All such permanentrecord papers are to be filed sequentially.	3
5	Maintaining records of consumables related to equipments	1
6	Receiving & Identification of patient in OT. With Records & Investigations.	2
7	O.T environment control & Lighting system.	2
	Total	**14**

3rd Quarter(90working Days)

Paper -1

Role of Technician during specialized Anesthesia and Surgery (Emergency Medicine)

Sl. No.	Topics	Lecture Hour	Demo/Practical
1	Emergency Procedures Surgical & trauma	0	1
2	Hypovolemic or haemmorrhapic Shock	1	0
3	Thoracic Surgery	1	0
4	Cardiac Surgery	1	0
5	Obstetrics & gynecology	2	0
6	Oncosurgery	1	0
7	First aid in case of shock Artificial respiration	0	2
8	First aid of fractures, dislocations and sprains	0	2

	Preparation of such patients for OT		
9	Classification and application of splints	1	1
10	Poisoning- Clinical features and first aid (Organo Phosphosphorus , snake & scorpion bites and sedative poisoning)	0	2
11	Burns and scalds,rule of 9, first aid	0	1
12	Common causes and first aid of unconsciousness	1	1
13	Heat stroke and exhaustion.	1	0
14	First aid in case of drowning.	1	1
15	Transport of accident casualties.	1	0
16	Basic Life Support	1	0
	Total	**12**	**10**

Paper – II
(OT equipment and their maintenance)

Sl No.	Topics	Demo/Practical
1	Introduction to various instruments / equipments used in OT	2
2	Maintenance of the equipments Must know: Daily maintenance of equipments such as operation table, suction machine, OT lights.	2
3	Boyles apparatus and its use Must know: Different parts, how to check machine for leakages, safety features present in Boyles machine.	1
4	Introduction to endoscopes, Use & maintenance of various endoscopes. Must know: cleaning & sterilization methods, how to store when not in use.	1
5	ECG apparatus and use Various leads, Recording ECG. Labeling. Must know: How to connect ECG apparatus to a patient, positions of various chest leads and limb leads, how to label ECG	1
6	Maintenance of Defibrillator Must know: Charging of defibrillator, positions of paddles, precautions to be taken while defibrillation.(shock)	1
7	Connecting patient to monitor. Must know: Pulse oximeter- what does it show, different types of probes.	1
8	Monitoring Standards – Minimum & advances Must know: How to take care of airway? How to clean airway? Rate of compression: Ratio of compression to mouth to mouth breath?	2
	Total	**10**

Paper – III
Resuscitation and Recent advances in OT technology

Sl. No	Topics	Lecture Hour	Demo/Practical
	Resuscitation		
1	Signs, symptoms of haemorrhage and shock, cardiac arrest.	1	0
2	Preparation of intravenous therapy, blood and platelet, FFP, albumin transfusion. Must know: How to start intravenous therapy? Checking of blood.	2	2
3	Infusion fluids in common use. Must know: What are the commonly use infusion fluids? Intravenous access Must know: What precautions to be taken?	1	1
	Recent Advances in OT technology		
1	Maintenance Care & Utility of High end equipments	1	1
2	Modular theatre functioning	1	1
	Total	**6**	**5**

List of Books for Reference

Sl. No.	Subject / Topic	Author/ Editor	Title of Book	Publisher
1	OR Technique	Berry & Kohris	Berry & Kahn's Operating room Technique	Elsevier
2	OR Techniques	Leena Gomez	Manual of Operating room technique	Jaypee
3	Instruments & Ward procedure	MM Kapur	A Complete hospital manual of Instruments & Procedure	Elsevier
4	Ward Procedures	Mansukh Patel	Ward Procedures	Elsevier
5	Emergency surgeries	Adam Brook	Emergency Surgery	Wiley
6	Anaesthesia manual	A. Ahanatha Pillai	Manual of an anesthesia for operation theater technicians	Jaypee
7	Microbiology	Mrs. Kapale Mrs. Pande	Laboratory manual in microbiology	
8	BD Chaurasia's Humans Anatomy		Human Anatomy Vol.1,2,3	CBS
9	Operative general surgery	Farquharson's	Textbook of operative general surgery	CRC Press
10	Fractures & Injuries	Adam's	Adams atlas of fractures Including Joints & Injuries	Elsevier
11	Orthopedics	Maheshwari	Essential orthopedics	Jaypee
12	Microbiology	Ananthnarayan & Panikar	Textbook of Microbiology	Universities Press.