

MAHARASHTRA STATE BOARD OF VOCATIONAL EDUCATION EXAMINATION, MUMBAI

1	Name of Course	C. C. IN OPERATION THEATRE TECHNICIAN (W.E.F. 2015-16)																																																														
2	Course Code	201201																																																														
3	Max.No.of Students Per Batch	25 Student																																																														
4	Duration	1 year																																																														
5	Type	Full Time																																																														
6	No.Of Days / Week	6 Days																																																														
7	No.Of Hours /Days	7 hrs.																																																														
8	Space Required	1) Class Room = 200 Sq feet 2) <u>Practical Lab = 200 Sq feet</u> Total = 400 Sq feet 3) Organization should have MOU with 1 Major OT & 1 Minor OT functioning hospital with relevant facilities. 4) Distance between Hospital and Institute Should not be more than 10 Km.																																																														
9	Minimum Entry Qualification	S.S.C. Pass																																																														
10	Objective Of Course	To assist in various surgical procedure in Operation Theater Setting																																																														
11	Employment Opportunity	In Operation Theatres of Surgical , maternity Homes & Hospitals to assist qualified person																																																														
12	Teacher's Qualification	P.G. Degree / Degree in Medical branch./BSc Nursing /GNM																																																														
13	Training System	Training System Per Week <table><tr><td>Theory</td><td>Practical</td><td>Total</td></tr><tr><td>12 hrs</td><td>30 hrs</td><td>42 hrs</td></tr></table>							Theory	Practical	Total	12 hrs	30 hrs	42 hrs																																																		
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14	Exam. Scheme	<table><tr><th>Sr. No.</th><th>Paper Code</th><th>Name of Subject</th><th>TH/PR</th><th>Hours</th><th>Max. Marks</th><th>Min. Marks</th></tr><tr><td>1</td><td>20120111</td><td>Anatomy Physiology</td><td>TH-1</td><td>3 hrs.</td><td>100</td><td>35</td></tr><tr><td>2</td><td>20120112</td><td>Principles & Practice Of Theatre Management And Material</td><td>TH-2</td><td>3 hrs.</td><td>100</td><td>35</td></tr><tr><td>3</td><td>20120113</td><td>Personal Management Of Hospital Staff Controlling Supervision</td><td>TH-3</td><td>3 hrs.</td><td>100</td><td>35</td></tr><tr><td>4</td><td>20120121</td><td>O.T. Maintenance</td><td>PR-1</td><td>3 hrs</td><td>100</td><td>50</td></tr><tr><td>5</td><td>20120122</td><td>Maintenance Of Medical Equipments</td><td>PR-2</td><td>3 hrs.</td><td>100</td><td>50</td></tr><tr><td>6</td><td>20120123</td><td>Maintenance Of Non-Medical Equipments</td><td>PR-3</td><td>3 hrs</td><td>100</td><td>50</td></tr><tr><td></td><td></td><td>Total</td><td></td><td></td><td>600</td><td>255</td></tr></table>	Sr. No.	Paper Code	Name of Subject	TH/PR	Hours	Max. Marks	Min. Marks	1	20120111	Anatomy Physiology	TH-1	3 hrs.	100	35	2	20120112	Principles & Practice Of Theatre Management And Material	TH-2	3 hrs.	100	35	3	20120113	Personal Management Of Hospital Staff Controlling Supervision	TH-3	3 hrs.	100	35	4	20120121	O.T. Maintenance	PR-1	3 hrs	100	50	5	20120122	Maintenance Of Medical Equipments	PR-2	3 hrs.	100	50	6	20120123	Maintenance Of Non-Medical Equipments	PR-3	3 hrs	100	50			Total			600	255						
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Curriculum :- OPERATION THEATRE TECHNICIAN

Theory I :- ANATOMY & PHYSIOLOGY

Introduction of Human body with Anatomical and Physiological aspect.

- 1 Cell tissues, organ and Body Regions.
- 2 Musculoskeletal system, Bones, Joints, Muscles.
- 3 Digestive System, metabolism, Carbohydrate, Protein and Nutrition.
- 4 Circulatory System
- 5 Respiratory System
- 6 Endocrine System
- 7 Nervous System
- 8 Excretory System - Kidney and Skin.
- 9 Reproductive System.

PRACTCAL - I – O.T. MAINTAINANCE

1	Hygiene – General –of O.T. & personnel and used of various disinfectants / solution for clearing.
2	Upkeep of instruments / Equipments etc. (Details of sterilization of equipment/Purchase/ Storage)
3	Equipment maintenance & Bio-med. Engg.
4	Water supply, Electric; wastage disposal; drainage systems of O.T.
5	Replacing new equipment, disposing old ones & & report to O.T in- charge for purchase.
6	Guidance from surgeons & nurses from equipment maintenance
7	Linen requirements of operation theatre
8	How to arrange line for various operations
9	Linen keeping & maintenance
10	Dis-infection & Sterilization of linen
11	Operation theatre cleanliness
12	Arranging of equipment trays required for specific surgeries
13	Preparing for inspection of the operation theatre
14	How to organize operation theatre of various super-specialties
15	Use of computer in Theatre for billing and documenting various records and activities.
16	Maintenance of Colour of walls, flooring roof etc.
17	Maintenance of Air-conditioning.
18	Laminar airflow system in operation theatre
19	Emergencies in O.T. and active plan for various emergencies
20	Central oxygen, vacuum systems
21	Use of computer in Billing, inventory
22	Any other topics related & not related.

THEORY - II

PRINCIPLES & PRACTICE OF THEATRE MANAGEMENT AND MATERIAL

MANAGEMENT OF THEATRE

1	Need & why OT planning is required
2	Structural designing & planning of OT in 20 bedded up to 100 bedded hospitals.
3	Planning and strategic analysis of activities and their implementation
4	Organizing, Co-ordinating & controlling.
5	Interpersonal relation & communication (Obstacle & improvement of the same oral & written)
6	Dynamics of Group behaviour – conflicts & solutions with motivations.
7	Staff patient relationship
8	Organizing with theatre staff
9	Zoning & circulation of OT
10	Patient care Motivation guidance / Psychological support.
11	Patient escort to & from the OT.
12	Communication & Interacting with General Ward Staff about O.T. procedures, information / Guidance about treatment etc.
13	Care of O.T. before surgery/ during surgery and after surgery.
14	Record keeping / Documentation – (Both- of No of surgery / patient & no of instruments, equipments etc.) and O.T. staff records.
15	Principles of Material Management – Definition / scope. Functional Objectives.
16	Integrated Material Management Aims; Advantages, problems with hospital etc.
17	Material planning – Indenting guidelines, materials Classification.
18	Inventory Control – Safety Storage ABC & VED analysis
19	Utilization of O T – Stores handling & management etc.
20	Remedial measures : Drugs reviewing, control of pilferage & wastage.
21	Detailed documentation of present material, cost charting equipment cost etc.
22	Classification of used & unused material before and after surgery and its planning prior to surgery.
23	Consumable & non consumable store, utilization and documentation
24	Baseline stock and systems for billing of operation theatre material.
25	Control / Record of all medical/ surgical material and how to demand as & when required.

PRACTICAL - II - MAINTENANCE OF MEDICAL EQUIPMENTS

1	Operation Theatre routine working
2	Preoperative requirement of patient by indoor staff
3	Checking of documents pre operatively
4	Preparation of various trays for operative procedures
5	Surgical instruments for Orthopedic, Gynec., E.N.T. Ophthalmology Hand and plastic, General surgery, etc.
6	Surgical tools & handling.
1	How to find out recovery of patient from anesthesia
2	Anesthesia equipments & accessories
3	Anesthesia drugs and its stocking from drugs safety
4	Surgical disposable material and its handling
5	Sterilization & disinfecting techniques
6	Theatres supportive services maintaining such as gas vacuum, electricity, A/C.
7	Maintenance of surgical instruments.

THEORY – III

PERSONAL MANAGEMENT OF HOSPITAL STAFF CONTROLLING SUPERVISION

Bio-medical physics – Electrical Equipment handling and management

1	Role & aim of personnel management
2	Duties, job analysis of theatre staff
3	Moral & motivation / Advantages & disadvantages of each hospital set-up/ Staff-training / duties.
4	Management / Relations with doctors (Surgeon); nurses, Paramedical persons. Specifying & scheduling of work in consultation with in-charge of O.T. preparation before & after surgery.
5	Supervision of staff for material / instruction, inspection of various article & equipment.
6	Basic of electricity / Physics, voltage / Amp; conductor-charge.
7	Various equipments details (Nature of electrical supply voltage / stabilizer etc.)
8	Functioning / Principles of each equipment such as suction machine, X-ray, anaesthesia apparatus, ventilators, operating microscope, defibrillators, suction machine cautery, O.T. Trolley, Lamp Shadowless, bore drills, endoscopes, E.C.G., I.I. system etc.
9	Records of each equipment.
10	Training for Assisting doctors with equipment and appliances
11	How to identify and anticipate defects of various equipments.

PRACTICAL - III - MAINTENANCE OF NON- MEDICAL EQUIPMENTS

1	Maintenance of non- medical equipments
2	Shifting of transfer of patient to ward & recovery room
3	Gowning & gloving / degloving procedures
4	Post operative procedures
5	Bacteriological monitoring
6	Cleanliness & house keeping
7	Emergencies in operation theatre how to assist
8	Methods & procedures of assisting O.T. staff during operations & theatre activities.
1	Theatre linen handling
2	Nature of duties and supervision by staff in-charge
3	Plaster technique, splints & bandage, dressing
4	Assisting Radiology procedure Preoperatively & assists operation theatre
5	Operation theatre waste handling & disposal
6	Use of computer in Operation Theatre
7	Documentation of Operation Theatre activities
8	Helping Anesthetists in O.T.

Hospital should have following infrastructure and equipments

Casualty Department:

Sr. No.	NAME OF EQUIPMENT	Quantity
1	Oxygen Cylinders	02
2	Operation Trolleys	02
3	Suction Machine	02
4	Saline Stand	02
5	Surgical Instrument Set	02
6	Operation Table	01
7	Shadowless lamp	01
8	Sterilizer	01
9	Mobile X-ray Machine	01
10	Plaster cutting Instruments Set	02
11	Dressing Trolley	01
12	Tracheotomy Set	01
13	Laryngoscope	01
14	Gastric tubes and Catheters	02 dozens
15	Boyle's Apparatus	01
16	Thomas Splints and other Varieties of splints	20

O. T. COMPLEX EQUIPMENTS :-

Sr. No.	NAME OF EQUIPMENT	NUMBER
1.	Defibrillator	One
2.	Monitors	Three
3.	Ventilators	Three
4.	Operation tables (Hydraulic)	Three
5.	Orthopaedic Tables	Two
6.	Suction Machine	Seven
7.	(Flashautoclave – 10 MIN)	Two
8.	Operation Instrument sets for Orthopaedic Surgery	Four
9.	Arthroscopy Instrument set (T.V. Cassettes)	One
10.	Implants of various sizes	One set
11.	A.O. Equipment	
	A.O. Mini Fragment Set	One
	A.O. Mini Instrument Set	One
	A.O. Basic Instrument Set	One
12.	Oticare	Four
13.	Surgical Diathermy	Four
14.	Emergency Trolleys	Two
15.	Image Intensifier	One
16.	Instrument Steriliser	One
17.	Electrical Drill	Two
18.	Pneumatic Drill	One
19.	Shadowless Halogen Lamps (Four in one)	Two
20.	Horizontal Autoclave	One
21.	Electronic Tourniquet	One
22.	Electronic Warmer	One
23.	Head Lamp	One

24.	Portable Lamps	Three
25.	Ceiling Shadowless Lamps	One
26.	Clean Air System	Two
27.	Mini Bone Set	One
28.	Oxygen Cylinders	Fifty
29.	Nitrous Cylinders	Thirty
30.	Instruments Trolleys	Fifteen
31.	Overhead Steel Trolleys	One
32.	Laryngoscopes	Six
33.	E. C. G. Machine	One
34.	External Fixator Instrument Set	Three
35.	Wagner's Implant Set	Fifty
36.	Ilizarov Equipment sets	One
37.	Joint replacement Instrument Set	One
38.	Spine Instrumentation Set.	One

General Surgery Equipments:-

1. Babcoc Forceps
2. Mixer's Forceps
3. Abdominal Self Retractor
4. Intestinal Clamp
5. Bulldog Clamp

Plastic Surgery Instrumentation Set

Note :- Routine all surgical instruments like retractors, Elli's forceps, Artery forceps of all types and sizes, Kocher's forceps should be in stock

Cordiothoracic Surgery :

General instrument set & fanistrator – retractor set.

Neuro Surgery, Plastic Surgery, Genitourinary Surgery :

Opening artery forceps

Hudson Brace with

Burr Bayonets forceps

Micro forceps Adson forceps

Adson Dura

Separator Self

retained retractor

Gigli Saw

Bone Nibbler

Hambee's Knife &

Blade Pine Plane

forceps Urethral

sound set

Male Metal Catheters

Female Metal Catheters

Folley's Catheter Introducer

Male cot Catheter Introducer

Excision Clamp

Rectal Forceps Perineal Scissor Anal

Retractors Rectal Speculum set

Sets of Equipments in obstetrics and gynecology, general Surgery, E.N.T., Ophthalmology etc. should available for demonstrations and training during practice.

ANESTHESIOLOGY EQUIPMENTS :-

Sr. No.	EQUIPMENT	NUMBER
1	Boyle's Apparatus (Three with ventilators)	Four
2	Open Drop anesthesia	Two
3	General Anesthesia Equipment	Three
4	Paramedical Anesthesia Equipments	Three
5	Vaporizers	Two
6	Resuscitation & Suction Sets	Four
7	Laryngoscopes	Two
8	Endotracheal Tubes & accessories	Twenty
9	Oxygen Therapy Equipment	Central
10	B.P. Instruments	Two
11	Ambu Bag with Bellow's Apparatus	Two
12	Pulseoximeter	Four
13	N.I.B.P. Monitor	Two
14	Oxygen concentrator	One

Equipment required to be available in Institute

Sr.No.	EQUIPMENT	Quantity
1	Autoclave Sterilizer	01
2	Scrub's & Disinfection Materials	As per requirement
3	Instruments for common Surgeries	As per requirement
4	Tools Charts	As per requirement
5	O.T. Tray / Trolley	As per requirement
6	Bed	02
7	B.P. Instrument	02
8	Stethoscope	25
9	Suction Machine	01
10	Instrument Kit	01

Reference books required :-

Sr. No.	Name of the Book	Author
1	Effective Interaction with Patients (Xerox)	Ann Faulkner
2	Effective Interaction with Patients (Xerox)	Ann Faulkner
3	Learning to care in the Operation Department (Xerox)	Kate Nightangale ctal
4	Learning to care in the Operation Department (Xerox)	Kate Nightangale ctal
5	A First Handbook of Medical Instruments	A. Bhowmick G. Chatterjea
6	Handbook of Hospital Personal Management	R. C. Goyal
7	Manual of Straight Instrument and Procedures	M. M. Kapur
8	Companion for Obstetrics & Gynee Practical Examination	Dr. Haresh U. Doshi
9	Anatomy & Physiology for Nurses	Evelyn Pearce
10	Pocket Guide to the Operating Room	Maxine A. Goldman
11	Anatomy & Physical Illustrated	S.S. Nadkarni
12	Physics & Equipment in imaging modalities	Stepharic Mass
13	Clinical Manual of Medical procedures	Shashank V. Parulekar
14	Handbook of surgical instruments for undergraduates	
15	Synopsis of Medical Instruments & Procedures	Arora, Yadav
16	Hospital and Health Care Administration	Shakti Gupta, Sunil Kant
17	Handbook of Human Physiology	Vidya Ratan
18	Principals of Hospital Administration & Planning.	B. M. Sakharkar
19	Traction and Orthopaedics appliances	Stewart & Hallett
20	Traction and Orthopaedics appliances	Stewart & Hallett
21	Surgical Appliances	John Bell
22	Gary's Anatomy	D. W. Sifton
23	Gary's Anatomy	D. W. Sifton
24	Atlas of Orthopaedics anatomy	Frant H. Netten
25	A companion to manuals practical anatomy	E.B. Jamicson
26	Cunningham's Manual of Practical Anatomy upper & lower limbs	G. J. Romanes
27	Cinningham's Manual of Practical Anatomy Thorax & abdomen	G. J. Romanes
28	Cinningham's Manual of Practical Anatomy	G. J. Romanes
29	Clinical Anatomy for Medical Student	R.S. Snell
30	Physiology (MCQ)	
31	Physiology	Bullock Wang
32	Source book of modern technology for hospitals and health care	ISHA
33	Hospitals Administration	Francis
34	Hospital waste management a holistic approach	Ananad
35	Management information reports for operating managers	Kulkarni
36	Hospital stores management	Shakti Gupta
37	Hospital and health care administration	Shakti Gupta
38	Principle of hospital administration	Sakharkar
39	Hospitals Planning and administration	Davics
40	Pre-Hospital emergency care secrets	Pous
41	Hospital organization management	Darr

Audio Visual Cassettes :-

Sr.	Title
1	Rheumatology
2	Total Hip Replacement – Arthroplasty
3	C/D – ICL/Up –Date
4	Orthopaedics up -Date
5	Orthopaedics up –Date
6	Orthopaedics up –Date
7	Orthopaedics up –Date
8	Total Hip Replacement
9	Total Hip Replacement
10	2 nd National Conference and Hand on Workshop on total Hip Replacement and Total Knee Replacement
11	Surgical Techniques – Dr. M.N. Shahane
12	Surgical Techniques – Dr. M.N. Shahane
13	Posterior Lumbar Inter Body Fusion – Dr. P. S. Ramani.
14	Total Condylar Knee System.
15	Total knee replacement
16	MRI/Auto & Allo Graft with Steffee Plating – Dr. Ramani
17	Dr. Chormale M.G.
18	Techniques of fracture fixation
19	Unmasked – The Word lectures series 1997 – Dr Christian Barnard
20	Internal Decompression for Spinal Stenosis – Dr. P.S. Ramani
21	Orthoscopy
22	Ring fixation system in Orthopaedics
23	Orthopaedics Update
24	Orthopaedics Update, Anterior Retro peritoneal Approach a fusion of the lumbar spine
25	A film by Narendra Dale
26	Thoracic Potts Spine Case
27	Total hip replacement

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