

Diploma in Hospital Assistant and Phlebotomy (DHAP)



Effective from Academic Year (2020-2021)

Shri Govind Guru University

Godhra

Diploma in Hospital Assistant and Phlebotomy

Eligibility Criteria: 12th Pass (any stream) or above with basic understanding of English

Duration of Course: One year

About Course:

Hospital Assistants takes care for patients under the supervision of Doctors, Nurses and other Medical staffs. They are involved in patients' day-to-day activities to help Nursing staff in giving all type of treatments prescribed by Doctors.

Phlebotomist is a health care worker who performs phlebotomy in healthcare settings. A phlebotomist usually works in medical offices, clinics and laboratories. His/her job is to assist medical laboratory technologist/ doctors and nurses in order to exclusively take care of the blood collection, IV Fluids and drug administration process.

Objective of the Course:

To develop a pool of trained worked forces who are employed by Healthcare service providers (Govt. Hospitals, Multispecialty Hospitals, Private Hospitals and Diagnostic Laboratories) to assist Doctors / Nurses / Medical Laboratory Technologist/ Pathologist.

This course is geared to prepare personnel with 10+2 or above background and who desires to be employed as a Hospital Assistant / Phlebotomist in a Health care facility. This program focuses on the acquisition of skills necessary to take care of the patients and draw quality blood samples from patients and prepare those specimens for medical testing.

Medium of instructions: English language shall be the medium of instruction for all the subjects of study and for examination of the course.

Attendance: A candidate has to secure minimum 80% attendance in overall.

No. of Seats: 30 seats

Eligibility for Institution: Any college affiliated to the Bhakta KaviNarsinh Mehta University, Junagadhand having hospital attachment.

Faculty Profile: One Visiting Faculty - M.B.B.S./ B.A.M.S./ B.H.M.S./ M.D./ M.S.
One Visiting Faculty – M.D.(Pathologist)
One Regular Faculty – G.N.M. or B.Sc.(Nursing) or any Nurse
One Regular Faculty - Medical Laboratory Technician
One Visiting Faculty – English Subject
One Visiting Faculty – Computer Subject

Structure of the Course

Semester - I

Paper No.	Paper Name	Credit	Marks		
			Ext.	Int.	Total
Paper-1	Introduction to Medical Science and Phlebotomy	3	70	30	100
Paper-2	Hospital Techniques and Procedure	3	70	30	100
Paper-3	Patient Records, Safety & Infection Procedures and Biomedical Waste Disposal	3	70	30	100
Paper-4	Practical for Hospital Assistant	3	70	30	100
		12	280	120	400

Semester - II

Paper No.	Paper Name	Credit	Marks		
			Ext.	Int.	Total
Paper-5	Fundamentals of Blood Collection	3	70	30	100
Paper-6	Drawing Blood, Labelling and Transporting Blood Samples	3	70	30	100
Paper-7	Practical for Phlebotomist	3	70	30	100
Paper-8	On Field Training for Hospital Assistant and Phlebotomist - Training in Hospitals - 15 days - Training in Pathology Lab. – 15 days	3	70	30	100
		12	280	120	400

Examination:

- **1: Standard of Passing the examination:**
 - Candidate must obtain at least 40% marks separately in External / Internal of each Theory paper / Practical paper
- **2: Exemption**
 - Candidate failing the examination as per above provisions but securing 40 out of 100 marks in any theory paper or practical paper separately may be eligible to be exempted from appearing again in that paper at the

subsequent examination and will be declared to have passed the examination when he passes in all remaining papers in accordance with the above provisions.

- **3: Marks of Internal and University Examination and Credits**
 - Total marks of each theory paper are 100 (university examination of 70 marks + internal examination of 30 marks).
 - Total marks of each practical paper are 100(university examination of 70 marks + internal examination of 30 marks).
 - Total Marks of Viva Voice on Field Training and Report are 100 marks.
- **4. Structure of Question Paper**

Question - 1		
Q - 1	Answer the following questions (Fill in the blanks / One word)	20 (10 x 1 Marks)
Q - 2	Answer the following questions (Any 5 out of 7)	10 (5 x 2 Marks)
Q - 3	Answer the following questions (Any 5 out of 7)	15 (5 x 3 Marks)
Q - 4	Answer the following questions (Any 5 out of 7)	25 (5 x 5 Marks)
Total		70 Marks

Internal Evaluation for Each Theory Paper – 30 Marks

No.	Pattern	Marks
1	Assignment	10
2	Internal Test	10
3	Seminar / MCQ or One word Test	10

Internal Evaluation for Each Practical Paper – 30 Marks

No.	Pattern	Marks
1	Practical Performance	20
2	Practical Journal	10

Internal Evaluation for Field Training – 30 Marks

No.	Pattern	Marks
1	Report of Hospital Training	15
2	Report of Pathology laboratory Training	15

Paper-1 – Introduction to Medical Science & Phlebotomy

Unit. 1. Primary Patient Care

Healthcare delivery system in India at primary, secondary and tertiary care
Issues in Healthcare Delivery System in India
Health Scenario of India – Past, Present and Future
Basic Medical Terminology
Community Health services in India
Know Resuscitation
Know Emergency First Aid & basic first aids
Know the importance of Patient Postures
Know careful and safe transportation of Patient
Know dressing, different types, bandaging and splinting
Know the methods of Care of immobilized limbs (fractured) dislocated limbs
Study the use of Common drugs used in life support, side effect & anti dots in case of adverse reactions.
Understand to judge the gravity of Emergency situations & organize the various measures to cope with them
Know and measure Blood Pressure, Pulse, Respiration rate, Temperature, Methods of taking Temperature various Blood Pressure measuring devices.

Unit. 2. Basic Anatomy and Physiology - I

Basic Structure and Function of Human Body

- a. Learn general anatomical terms and gross anatomy of organs in different regions in body
- b. Study Physiological Functions of different organ of the Body

Cardio vascular and Respiratory Systems

- a. understand the Cardiac cycle
- b. List and Identify the Major arteries and veins
- c. Study Coronary Circulation
- d. Understand structure and functions of respiratory organs from nose to lungs.

Study mechanism of breathing and study physiology of respiration.

Understand basic concept of gas exchange and study pulmonary circulation

study role of lymphatic circulation and lymph nodes

2.3 Digestive System, Reproductive system and Excretory System including kidney & skin

Study anatomy and Physiology of following organs : Stomach, duodenum, small intestine, large intestine, liver, gall bladder, Pancreas, Spleen, Kidneys, Ureters, Bladder, Urethra, Prostate, Testis, Vas-Deference, Seminal Vesicles, Ovaries, Uterus

Unit. 3. Basic Anatomy and Physiology - II

Nervous system and Sense Organs

- a. Study gross anatomy of brain, spinal cord, Cranial Nerves, and their distribution motor nerves, Sensory nerves, Reflexes
- b. Study gross anatomy and function of eye, ear, nose, tongue, skin

Skeletal system

- a. Study the structure of Bone, Number of Bones, Types of Bone (Long, Flat, etc) and list of Major bones in skeleton. Upper and Lower Limbs, Pelvis, Spine
- b. Function of selected Joints

Muscular System

- a. Structure and Functions of typical Muscles and tendons
- b. Types of Muscles: Voluntary, Involuntary, etc.
- c. Muscles associated with joint movement and body posture (Flexors and extensors)

Endocrine System

- a. Name of Various Endocrine glands and organs
- b. Name of Various hormones and their effect on physiology

Composition of Blood and Blood cells

Unit. 4. Primary Learning for Phlebotomist

Introduction to Medical Laboratory Technology

Introduction to Microbiology

Introduction to Biochemistry

Do's and Don'ts for Phlebotomist

Importance of Phlebotomy and need for safety protocols

Steps in Blood Collection

Requirement to become a certified Phlebotomist

Unit. 5. Hygiene and Nutrition

Know the methods of body hygiene, advise of social mannerism, avoidance of bad habit

Eating Habits, choice and selection of Food, Criteria for well cooked and well preserved food, safe food, calories requirements according to age and activities.

Understanding the importance of bowel care, rest, sleep and exercise

Study the various body postures and their significance

Paper-2 – Hospital Techniques and Procedures

Unit. 1. Asepsis and Sterilisation

Definition of asepsis and sterilization

Study different techniques of asepsis

Study different techniques of sterilization: Steam sterilisation, Dry Heat, Flame, Boiling, U.V.(Ultra Violet), Radiation, ETO (Ethylene Trioxide), Hypochlorite,etc.

Know the Methods of Handling of Sterile Material

Unit. 2. Operation Theatre Techniques

Know Pre and Post Operative care:

Suture Material, Scrubbing, Gloves, Gown, Suction, Cautery

Prepare check list of all equipment, consumable and disposables

Identify, list and understand uses of O.T. surgical instruments.

Practice counting of swabs and instrument pre and post operatively

Study estimation of blood loss

Checks, Working Condition of O.T. Instruments and Carry out their preventive maintenance

Unit. 3. Basics of Patient care and life support skills

Vital signs

Basic emergency care – First Aid and Triage (degrees of urgency to wounds or illnesses to decide the order of treatment of a large number of patients or casualties).

Identifying signs and taking measures for

- a. Choking and Heimlich Maneuver
- b. Bleeding including nosebleeds
- c. Minor burns
- d. Hypothermia
- e. Asthma attack
- f. Bites and stings
- g. Fainting
- h. Sprain

Ventilations including use of bag-valve-masks (BVMs)

One- and Two-rescuer CPR

Using an AED (Automated external defibrillator).

Managing an emergency including moving a patient – log transfer

Unit. 4. Routine and emergency procedures

Know to Assess patient's general conditions

Practice measurement of various parameters

Temperature, Pulse, Respiration, B.P., Skin complexion

Check Level of Consciousness of Patients (Conscious, Unconscious, SemiConscious, Comatose)

Check Body Odor and Breath Odor

Practice Methods of Transport of Sick, Wounded and Critically Ill Patients

Study Various methods of Oxygens supply

Practice starting of IV line listing the steps and precaution taken

Know Immunizing Techniques: Oral Doses, Injections, Vaccines

Know Immunization dosage, schedules and booster doses

Know how to deal with Medico Legal cases and with Concerned agencies

Police, Judiciary, Local Self Govt. Public NGO

Unit. 5. Familiarity with ICCU setup

Plot and ideal layout of ICCU setup

Plan proper ventilation and lighting

Identify list and carry out preventive maintenance of ICCU requirements including Monitor, Alarms, etc.

Operate Instruments and Monitor, Alarms etc. after establishing Patient connection

Study ICCU discipline and Protocol

Paper-3 – Patient Records, Safety, Infection Control Procedures and Biomedical Waste Disposal

Unit. 1. Computers and information technology

Use of computers, its input and output devices

Use of basic software such as MS Office, operating systems (Windows) and internet

Use of data –

- a. Entry, saving and retrieving
- b. Scanning and copying medical records/documents
- c. Efficient file naming and uploading
- d. Printing, as needed

Application of Computers in clinical settings

Unit. 2. Update Patient Records, Correlate and Communicate Health Information

Patient record database management and documentation

- a. Medical records
- b. Database
- c. Documentation and Database Management

EHR and EMR

- a. Electronic Health Records
- b. Electronic Medical Records

Sources and types of health information

- a. Primary, secondary and tertiary sources of health information
- b. Evidence based health information sources
 - i. Health literacy
 - ii. Patient values and preferences

Unit. 3. Follow All Safety and Infection Control Procedures

Infection Control practices

- a. Definition
- b. Basic principles of infection control practices
- c. Medical Asepsis - Practices to promote medical asepsis

Universal/ Standard Precautions

- a. Hand hygiene
- b. Use of personal protective equipment (e.g., gloves, gowns, masks)
- c. Safe injection practices
- d. Safe handling of potentially contaminated equipment or surfaces in the patient environment
- e. Respiratory hygiene/cough etiquette

Contact precautions

Healthcare Associated Infections

- a. Nosocomial Infection
- b. Infection Prevention
- c. Needle stick injuries and their prevention and management
- d. Catheter-related infections
- e. Urinary Tract Infections
- f. Surgical site infections

Healthcare worker safety

- a. Appropriate use of PPE (Personal Protective Equipment) and safe work practices
- b. Sharp safety practices
- c. Occupational hazards

Unit. 4. Biomedical Waste Disposal

Introduction of Bio-medical waste (BMW)

- a. Classification of Bio-medical waste
- b. Sources of Biomedical waste
- c. Importance of Bio- medical waste management during home health aide (care)

Know the precautions for collection, transport and conventional and standard methods of Bio Medical Waste Disposal

Study Rules and Regulations for Bio-medical waste Disposal

- a. Understand provision of this rule
- b. Know various category of Bio-medical Waste
- c. Know Colour code of containers carrying bio-medical waste
- d. Types of Container for the above
- e. Understand the Safety standards for Handling, Storage and Transport of Waste Disposal

Methods of Waste Disposal: Incineration, Autoclaving, Shredding

Effluent Waste Management

- a. Collection of Waste
- b. Know methods of Effluent Waste Disposal

Unit. 5. Professionalism, Values and Communication Skills

Code of conduct, professional accountability and responsibility, misconduct

Ethics in healthcare – Privacy, confidentiality, consent, medico legal aspects

Understanding scope of work and avoiding scope creep

Need for customer service and service excellence in medical care

Handling effective communication with patients & family

Basic reading and writing skills

Business communication like letters, e-mails

Listening and Speaking skills

Recognizing changes in the patient- behavior/ abnormal signs and reporting to the

Medical Officer/Laboratory Technologist/ Nurse in charge

Dealing with anger or depression of the patient

Paper-4 – Practical for Hospital Assistant

1. Demonstration of body system on Skeleton, Charts and Videos (Audio-Visual Functions)
 - a. Show the position of different organs of the body
 - b. Identify and show sense organs
 - c. Identify different bones of the body
 - d. Identify different Joints of the body
 - e. Identify location of major arteries of the body
 - f. Study structure of different muscles
 - g. Identify different body postures
 - h. Study central nervous system of the body
 - i. Identify and name major or important muscles
2. Check the equipments, Consumable and disposables, confirming to prepare ideal check list identifying them
3. Measures Temperature, BP, Pulse, Respiration Rate of the Patient using respective instruments
4. Identify the various contents of First Aid Kit
5. Demonstrate Heimlich Maneuver
6. Demonstrate the immediate action to be taken for a patient with nosebleed/ minor burns/ asthma attack/fainting/ sprain/ hypothermia/ bites – bee sting or snake bite
7. Demonstrate basic first aid and CPR
8. Explain and Demonstrate sterilization and sanitization techniques for equipment
9. Demonstrate the steps for patient preparation for major and minor Operation
10. Study various methods and maintenance of oxygen supply
11. Prepare dressing tray, IV tray, Ryle's Tube and Urinary Catheter.
12. Demonstrate dressing of "Wounds" of patient on various sites.
13. Identify and Operate for test the OT instruments.
14. Transport / Shift the critically sick patient from one room to another.
15. Preserve, Label and forward the collected samples of patients
16. Demonstrate resuscitation and first aid procedures on a dummy patient.
17. Immobilization the fractured limb wound of wounded patient.
18. Test the ICCU equipment's multi parameter monitor, defibrillator, ECG and declare ok.
19. Demonstrate of paracentesis procedures (CSF, Pleural Fluid, Ascetic Fluid).
20. Demonstrate sharp safety practices
21. Identify, demonstrate and separate given biomedical waste in coloured bins /bags.
22. Demonstrate and describe appropriate procedures, policies and protocols for the method of collection and containment level according to the waste type
23. Demonstrate the basic use of computers, their devices and aspects related to data handling.
24. Explain the importance of documentation of patient records.
25. Demonstrate maintenance of patient database from dummy data.

26. Maintenance of Indoor and Outdoor Patient Records

Paper-5 – Fundamentals of Blood Collection

Unit. 1. Test Requisition Forms (TRF) and Blood Collection System

Types of TRF

Basic Principles of tests performed in healthcare settings which require collection of blood samples

Significance of recording details on Laboratory TRF

Important aspects of the TRF

Filling accurate information in the right location in the TRF

Interpreting the TRF details

Unit. 2. Anticoagulants used for Blood Collection and Blood collection systems

Types of Anticoagulants

Mechanism of Coagulation

Advantages and Disadvantages of each Anticoagulant

Blood Collection System

a. Open

b. Closed (Vacuum extraction systems)

Advantages and disadvantages of Blood Collection System

Unit. 3. Equipments used in vein puncture

Identification, types and usage of equipments used for vein puncture such as -

a. Tourniquet

b. Gloves

c. Antiseptic and disinfectant

d. Needle

i. Needle size

ii. Selection of needle based on size, location and volume of blood to be collected

e. Syringe or needle holder

i. Size of syringes

ii. Selection of syringe based on patient, volume of blood to be collected, strength of vacuum expected

f. Specimen container

g. Gauze – choice of gauge

h. Tape for strapping

i. Sharps disposal container and safety devices

Sterilization and sanitization

Troubleshooting and maintenance

Designing comfortable chair with hand rest for blood collection

Unit. 4. Patient preparation

Proper patient identification procedures and protocols to follow for different age group of patients

Patient interaction and reassurance

Patient preparation

- a. Handling patient in special conditions
- b. Patient positioning
- c. Cleaning the venepuncture site

Factors affecting patient preparation

- a. Therapeutic drug monitoring
- b. Effects of exercise
- c. Stress
- d. Diurnal rhythm
- e. Posture
- f. Age, gender, pregnancy etc.

Unit. 5. Principles of site selection and process for drawing blood Proper site selection for venepuncture

Proper site selection

- a. For general patients
- b. For hospitalized patients
- c. For paediatric patients

Following standard precautions

Site selection

- a. Attributes of preferred vein
- b. Vein selection
- c. Palpating the vein
- d. Inappropriate sites for venepuncture

Paper-6 – Drawing Blood, Labelling and Transporting Blood Samples

Unit.1. Draw Blood Specimens from Patients using Correct Techniques - 1

Needle insertion technique

- a. Angle of insertion
- b. Insertion technique
- c. Areas of caution

Order of draw

- a. Importance of correct filling order of sample tubes (Order of draw)
- b. First draw
- c. Second draw
- d. Third draw
- e. Last draw

Tube filling

Needle removal and sharp disposal

Unit. 2. Draw Blood Specimens from Patients using Correct Techniques - 2

Prophylactic treatment in case of emergencies during drawing blood

Special cases-

- a. Arterial blood sampling
- b. Paediatric and neonatal blood sampling
- c. Capillary sampling

Collecting blood in various case situations:

- a. Shock
- b. Haemorrhage
- c. Road Traffic Accidents
- d. Neonates

Infants, etc.

Blood Culture Collection to know Bacteraemia

Capillary / Peripheral blood collection (Sites, Procedures, Advantage and Disadvantage)

Talk on Arterial blood collection

Unit. 3. Prepare and Label the Blood Samples for Test

Post venepuncture process

- a. Examination of venipuncture site
- b. Application of adhesive bandage
- c. Instructions to patient

Preparation of blood samples

- a. Coagulation
 - i. Mixing of samples : Importance of mixing samples and Process of mixing samples

Labelling of blood samples

- a. Identification of samples

- b. Precautions for labelling specimen
- c. Bar code labelling

Types of sampling for various tests:

- a. Whole blood
- b. With coagulant
- c. Shaking of samples
- d. Without shaking of samples

Time duration of patient preparation before sampling

Instructions for Patients for FB(Fasting Blood Sugar), PP(Post Prandial), Lipid Profile and Other Special Tests

Unit. 4. Transport the Blood Samples to the Laboratory

Process of transporting sample

Conditions necessary for transportation of samples

- a. Temperature
- b. Pressure, and other necessary conditions
- c. Separation of Plasma / Serum before Transport to Laboratory

Packing of samples

- a. Ideal conditions of packing of blood samples

Factors that influence the outcome of laboratory results during collection and transportation:

- a. Knowledge of staff involved in blood collection
- b. Use of the correct gauge of hypodermic needle to prevent haemolysis or abnormal results
- c. The anatomical insertion site for venipuncture
- d. The use of recommended laboratory collection tubes
- e. Patient-sample matching (i.e. Labelling)
- f. Interpretation of results for clinical management

Unit. 5. Assist the Patient During and after Collection of the Specimen

Causes of failed venipuncture

- a. Procedure related such as -
 - i. Improper positioning of tube
 - ii. Rolling of veins
 - iii. Puncture through veins
 - iv. Collapsed vein
 - v. Partially inserted needle
 - vi. Accidental arterial puncture
- b. Patient related
 - i. Excessive bleeding
 - ii. Petechiae
 - iii. Nausea
 - iv. Vomiting
 - v. Fainting
 - vi. Seizures
- c. Corrective measures for failed venipuncture

Paper-7 – Practical for Phlebotomist

1. Demonstrate filling out a sample Test Requisition Form
2. Demonstrate interpreting a filled out sample Test Requisition Form
3. Explain and demonstrate preparation of patient before, during and after collection of specimen
4. Explain and demonstrate site selection procedures for venipuncture
5. Demonstration of Veins and Arteries of body from where Phlebotomist can obtain Blood
6. Enumerate the difference between open and close system of blood collection
7. Identify and select appropriate equipment including needle, collection system and blood collection tubes for routine tests
8. Describe the types of needles, syringes and their criteria for selection
9. Demonstrate and explain uses of various Vein finding devices
10. Explain and demonstrate the procedure for needle insertion
11. Explain and demonstrate correct order of draw
12. Explain and demonstrate blood sample preparation
13. Demonstrate correct labelling of blood samples
14. Explain and demonstrate blood sample packing
15. Explain conditions necessary for transportation of samples
16. Explain and demonstrate management of adverse events (Complications of Vein Puncture)
17. Explain and Demonstrate of Capillary / Peripherals Blood Collection (Sites, Preparation, and Needle Prick devices.
18. Explain and Demonstrate Arterial Blood collection for blood gas analysis
19. Explain in detail procedure of Blood collection for blood culture examination
20. Demonstration of Special Techniques of Blood Collection from infant / child and Patient having shock condition
21. Explain and demonstrate procedure for IV transfusion (Blood / IV Fluid)
22. Demonstrate and explain uses of intra cathvigo, butterfly needle, etc.
23. Prepare Peripheral Blood smear from the given Blood sample
24. Explain home blood collections (Phlebotomist on wheel)
25. Demonstrate the Universal standard precautions.
26. Demonstrate and describe the process of medical asepsis

Paper-8 – On Field Training for Hospital Assistant and Phlebotomist

1. Students should compulsory complete their On Field Training in Hospital for 15 days and in Pathology Laboratory for 15 days.
2. Student should prepare separate On Field Training Report for Hospital and Pathology Laboratory based on their experience.

Viva examination on Hospital Training - 35 Marks

Viva examination on Pathology Lab. Training – 35 Marks

EQUIPMENT LIST

1. Set of Physiological Charts and Anatomical Charts
2. Patient transport trolley / stretcher / foldable stretcher / Wheel Chair
3. Oxygen Cylinder and its control and supply accessories
4. IV set with saline bottle and stand
5. Computer system with Printer set
6. Microscope
7. Basic First Aid Kits
8. Centrifuge
9. Refrigerator
10. Heater/Warmer
11. Shaker
12. Suction Machine
13. B.P. measurement instrument(Mercury, Aneroid, Digital)
14. Pre and Post operative tray of Instruments
15. ECG Machine
16. Thermometer(Mercury, Digital)
17. Syringes & Needles
18. Butterfly needle(as required)
19. Spirit & cotton / Spirit swabs
20. Vacutainer Needles
21. Gloves
22. Tourniquet
23. Hand sanitizer
24. Highlighter & Marker
25. White stickers
26. Test tube racks
27. Stool & Urine Routine & Culture Containers
28. Aluminium Foil
29. Blank TRF
30. Glucose powder

31. Needle Cutter
32. Bio hazard bags for Waste Disposal / Blue sharps container for waste disposal
33. Tongue Depressor
34. Swab sticks
35. Tuberculin syringe
36. Tuberculin vial - 1 TU
37. Blotting Paper for BT
38. Capillary tube for CT
39. Stop watch
40. Simple Weighing balance
41. Height chart
42. Weighing scale for weight of patients
43. Plastic Measuring cylinder - 1 L
44. Tissue paper

Reference Books:

1. Clinical Skills for Healthcare Assistants and Assistant Practitioners by Angela Whelan (Editor), Elaine Hughes (Editor)
2. Essential Knowledge and Skills for Healthcare Assistants by Zoe Rawles
3. A Comprehensive Textbook of Community Health Nursing by Bijayalaskhmi Dash
4. Fundamentals of Nursing Paperback – 2016 by Taylor
5. Competitive Handbook of Nursing-VOL 1 & 2 by Prahlad Ram Yadav
6. Textbook of Medical Laboratory Technology by Author: Praful Godkar
7. Laboratory Practicals Vol. I & II by Author: Monica Chessbroup
8. Clinical Diagnosis by Author: John Bernard Henry
9. Clinical Pathology and Hematology by Author: Nanda Maheshwari
10. Essential of Clinical Pathology by Author: Shirish Kawthalkar
11. Manual of Medical Laboratory Techniques by Author: S. Ramakrishnan
12. Aaryogyani Aaspa by Indian Medical Association, Morbi branch
13. Prathamik Sarvar (First Aid) by Dr. M. G. Desai, Saint John Ambulance Association

References:

1. Phlebotomy-The Internet Pathology Laboratory for Medical Education
<http://library.med.utah.edu/WebPath/TUTORIAL/PHLEB/PHLEB.html>
2. WHO Guidelines on Drawing Blood: Best Practices in Phlebotomy :
http://www.who.int/injection_safety/phleb_final_screen_ready.pdf
3. Skills for Care & Skills for Health, Code of Conduct for Healthcare Support Workers and Adult Social Care Workers in England.
<http://www.skillsforcare.org.uk/document-library/standards/national-minimum-training-standard-and-code/codeofconduct.pdf>

4. Skills for Health UK. Details on Act within the limits of your competence and authority
<https://tools.skillsforhealth.org.uk/competence/show/html/id/85/>
5. National AIDS & STDs STI Control Programme (NASCO), Ministry of Health Kenya. 2013. Safe Phlebotomy Training for Health Care Workers in Kenya: Participant's Manual.
<http://www.health.go.ke/wp-content/uploads/2015/09/Safe-Phlebotomy-Participant%E2%80%99s-Manual.pdf>
6. Handbook for Phlebotomist by NSQF (National Skill Qualification Framework); Ministry of Health and Family Welfare, India

