



BIMS
Reg. No. E 7293
Baroda

BARODA INSTITUTE OF MEDICAL SCIENCE

A Unit of Atmiya Education and Charitable Trust

Affiliated to GCVT, Govt. of Gujarat.

"BIMS", 1St Floor, Kachhiya Patel Wadi, Opp. Polo Ground, Nr. Kirtistambh,

Shiyapura, Rajmahal Road, Vadodara-390001. (O) : 0265-2426771

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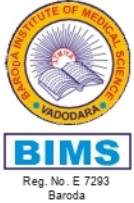
SYLLABUS

OF

DIPLOMA IN MEDICAL

LABORATORY

TECHNICIAN



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COURSE

ELIGIBILITY:

12th Sci. & Com/Arts, any Graduation

Duration:

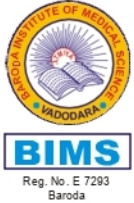
1 YEAR

Theory / Practical :

9 months theory and practical training

Job Placement:

3 Months



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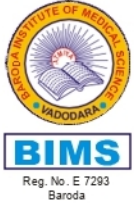
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Syllabus Committee Member:-

Sr. No	Name	Designation	Technical Qualification	Experience In Years
1.	Mr. Anil B. Patel	Director	M.Sc., Cytotechnologist, Trained at Tata memorial Hospital, Bombay	28 years
2.	Mrs. Urmi Patel	Principal	DMLT, Medical Technologist	15 years
3.	Dr. Dhaval Shah	Faculty	BMHS	11 years
4.	Dr. Vinod Patel	Faculty	M. B. B. S.	50 years
5.	Dr. Pradeep Naik	Faculty	M. D. Physician	30 years
6.	Miss. Kinjal Patel	Faculty	B.Sc., PGDCM	08 years
7.	Mrs. Roma Patel	Faculty	M.Sc. Micro	10 years
8.	Miss. Happy Gandhi	Assistant Faculty	B.Sc. Botony, DMLT	01 year
9.	Mr. Ilesh Pandeya	Admin	Ex. Director Aeromodeling school	35 years
10.	Dr. Vinod Patel	Admin	Ex. Principal, Arts & Commerce College, Karjan	35 years
11.	Mr. Parthil Ray	Admin	B.B.A.	05 years



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- ❖ INSTRUMENTATION
- ❖ GLASSWERES
- ❖ QUALITY CONTROL
- ❖ BLOOD COLLECTION METHODS
- ❖ BIOMEDICAL WASTE MANAGEMENT

1) HEMATOLOGY:

1. INTRODUCTION OF HEMATOLOGY

2. HEMATOLOGICAL DISEASE

3. ROUTINE HEMATOLOGICAL TEST:

- Introduction
- Complete blood count [CBC]
- Collection of blood
- Anticoagulants
- Determination of Hemoglobin (Sahli's Method, Cyanomethanoglobin Method)
- Total Erythrocytes count by hemocytometer
- Total Leucocytes count by hemocytometer
- Study of blood smear for differential leucocytes count and cell morphology
- Differential leucocytes count
- Study of morphology of Red blood cell
- Determination of Erythrocytes Indices
- Erythrocytes sediments rate by Wintrobe and Westergen method
- Determination of Reticulocytes
- Determination of Absolute Eosinophil count
- Automation of Hematology
- New parameters
- Hematological histograms



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4. HEMOSTASIS COAGULATION AND ROUTINE COAGULATION TESTS

- General consideration
- Mechanism of coagulation
- Blood coagulation
- Routine coagulation tests
- Congenital deficiencies of hemostatic disorder
- Diagnosis of bleeding disorder
- Determination of bleeding time
- Determination of blood clotting time
- Determination of clotting time by Lee-White method
- Determination of partial prothrombin time
- Determination of activated partial prothrombin time

2) GENERAL ANATOMY AND PHYSIOLOGY

- General Anatomy
- General Physiology

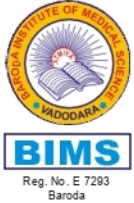
3) LABORATORY QUALITY MANAGEMENT AND AUTOMATION

- Quality control in Laboratory
- Total quality management
- Quality Control

4) BIOCHEMISTRY ANALYSIS

(1) CHEMISTRY OF CARBOHYDRATES

- Diabetic profile tests
- Determination of blood glucose
- Plasma glucose determination
- Enzymatic determination of glucose
- Glucose tolerance tests (GTT)



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- Glycosylated hemoglobin
- Determination of Glycosylated hemoglobin

(2) CHEMICAL ANALYSIS OF KIDNEY DISEASE

- General consideration
- Determination of Urea (Urea nitrogen)
- Determination of serum urea
- Determination of urea nitrogen by rate of reaction-UV Kinetic method
- Determination of serum creatinine (Kinetic method)
- Determination of serum Uric acid by end point method
- Kidney function tests

(3) CHEMISTRY OF PROTEIN

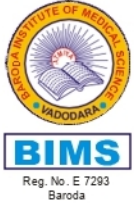
- Total serum proteins determination
- Determinations of serum albumin
- Determinations of CSF and Urinary protein

(4) LIVER FUNCTION TESTS

- Liver functions
- Pre-hepatic (Hemolytic) Jaundice
- Hepatic (Hepatocellular) Jaundice
- The routinely performed liver function tests
- Determination of serum Bilirubin
- Determination of SGPT
- Determination of SGOT
- Determination of ALP

(5) CHEMISTRY OF LIPID

- Criteria for the diagnosis of Hyperlipidemia
- Important of lipid profile tests



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- Determination of serum Cholesterol
- Determination of serum of Tryglycerides
- Determination of serum of HDL

(6) CARDIAC PROFILE TESTS

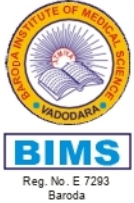
- Determination of serum CK (CPK)
- Determination of serum LDH
- Determination of serum Cardiac profile tests
- Determination of serum SHBD

5) CLINICAL MICROBIOLOGY

- Introduction
- Bacteriology
- Virology
- Mycology
- Parasitology
- Algae
- Gram's staining (Differential staining)
- Staining of *Mycobacterium Tuberculosis* and *M Leprosy* by Ziehl- Nielsen
- Culturing of diff types of *Micro organism*
- Composition of culture media
- Preparation of culture media
- Inoculation of culture media
- Diff technique of Isolation
- Use, preparation and Quality control
- Sterilization

1) DIAGNOSTIC SEROLOGY

- Introduction



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- Antibody
- Serological diagnosis of microbial disease
- VDRL (qualitative and quantitative) BY slide and test tube method
- WIDAL (qualitative and quantitative) BY slide and test tube method
- ASO (qualitative and quantitative) BY slide and test tube method
- RA/ RF (qualitative and quantitative) BY slide and test tube method
- CRP (qualitative and quantitative) BY slide and test tube method
- Detection of Hepatitis-B & C by ELISA
- Detection of HIV by ELISA

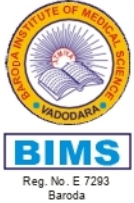
6) ROUTINE EXAINATION OF FLUID AND FAECES

(1) EXAMINATION OF URINE

- Introduction
- Composition of normal urine
- Laboratory tests
- Physical examination of urine
- Chemical examination of urine
- Determination of protein
- Determination of glucose
- Determination of ketones
- Determination of bile pigments, bile salts and Urobilinogen
- Determination of occult blood
- Chemical examination of urine by using multistrips reagent strips
- Microscopic examination of urine

(2) EXAMINATION OF FAECES

- Introduction
- Routine examination of faeces



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- Gross examination and physical examination of stool
- Chemical examination of stool specimen
- Microscopic examination of stool specimen

(3) SEMEN EXAMINATION

- General consideration
- Semen analysis
- Routine examination of semen
- Quantitative determination of semen fructose
- Interpretative semen analysis
- Microscopic examination of semen
- (morphology, motility and sperm count)

(4) PERI PLURAL FLUID

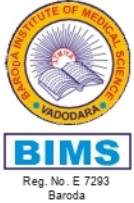
- Introduction
- Physical examination
- Chemical examination
- Microscopic examination

(5) PERI TONIAL FLUID

- Introduction
- Physical examination
- Chemical examination
- Microscopic examination

(6) PERI ABDOMINAL FLUID

- Introduction
- Physical examination
- Chemical examination
- Microscopic examination



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(7) PERI CARDIAL FLUI

- Introduction
Physical examination
- Chemical examination
- Microscopic examination

(8) CEREBROSPINAL FLUID

- Introduction
- Physical examination
- Chemical examination
- Microscopic examination

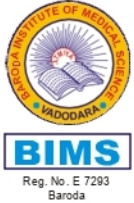
(9) SYNOVIAL FLUID

- Introduction
- Physical examination
- Chemical examination
- Microscopic examination

7] HISTOPATHOLOGY AND CYTOLOGY

(1) BASIC HISTOPATHOLOGY TECHNIQUES AND THE LABORATORY REQUIREMENTS

- Histopathology and cytology techniques
- Laboratory requirements
- Preparation of fixatives
- Methods of examination of tissues and cells
- Fixation
- Various types of fixatives
- To fix the sections on the slides
- Staining of tissue section by using hematoxylin and eosin staining method
- Staining of the cellular components in smears of exfoliated cells by Papanicolaou method



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8] IMMUNOHEMATOLOGY AND BLOOD BANKING:

- Introduction
- Human blood group systems
- Qualitative test for ABO grouping with antisera
- Qualitative test for ABO grouping by tube method
- Qualitative test for the recognition of the D (Rho)
- Antigen on human red blood cells
- Determination of D^u by tube method
- Coomb's Test (Direct and Indirect)
- Compatibility test (the cross matching) by saline-tube method
- Coomb's Test for cross matching
- Blood transfusion
- Collection of blood from the donor