



## DIPLOMA IN MEDICAL LAB TECHNICIAN (DMLT)

### 2 Years Diploma Course

#### -: REGULATION:-

The objective of the courses

1. The training of the candidate registering for various diploma (2 years) courses are aimed to carry out all routine diagnostic / therapeutic test on modern hospital laboratory

2. The Diploma course is of two years

3. Eligibility for admission in all Para medical Diploma courses.

The candidate must have passed 10+2 with at least 40% marks in aggregate of Physics Chemistry and Biology (P C B ) and for DMLT 10 + 2 ( P C B ) or 10 + 2 vocational (M L T) course with at least 40% marks will also be eligible

4. In case of SC/ST/OBC candidates, 5% marks relaxation will be given for the admission in above said courses 5. Weight age will be given as per university rules

6. Number of seats will be 50 in each course

7. The minimum age for admission shall be 17 years on 31 December of the Academic year of admission 8. The selection of candidate will be on the basis of the entrance examination or in the absence of entrance exam, purely on merit list prepared on the basis of marks obtained in qualifying examination

9. The admissions of students into various programs should be completed by 30th November. There shall be minimum 240 teaching days in one academic year.

10. Attendance of students: The student should have 75% attendance in theory and 75% attendance in practical to be eligible to appear in university examination. However, only Dean/ Principal of the college are empowered to condone 10% of attendance on valid grounds. Monthly attendance of students has to be sent to the university every month from the respective affiliated colleges.

11. Total Course Duration: A student has to complete the course that he/she has joined with in the double the duration of the actual time taken for the completion of the course i.e.- Four Years for all Diploma Courses.

12. Medium of instruction and examination: the medium of instruction will be English and the medium of examination will be either English .



13. For all the Diploma courses (which is of two years duration) at the end of first year, an Internal examination will be conducted at the college level itself and the result has to be sent to the University as per the scheduled notification.

14. Passing Marks of Examination:

- The passing marks of examination would be 50% for each subject and also in total marks obtained for both Diploma and Degree courses. The candidate has to pass in theory and practical examination separately. For theory paper the internal assessment marks, viva-voce and theory examination marks will be counted.
- The candidate should pass separately in two heads i.e In Theory (Theory plus Viva voce plus Internal Assessment) and also in Practical (with 50% marks).
- The candidate has to pass separately in each subject in internal assessment examination (with 50% marks) in order to be eligible to appear in university examinations.
- Regarding Grace marks it was decided that total weight age of grace marks would be 5 (five), and that grace marks can be split between the subjects. There will not be any grace marks for the Practical examination.
- Grace marks will not be added to total marks of the candidate. In Supplementary examination also similar pattern of grace marks will be followed.

15. Re-totaling & Re-valuation (Review) both should be allowed as per the university

17. Other rules regarding conduct of examination will be as per the university REGULATION/notifications 18. Permission will be given to start the courses after the permission from M P Paramedical council (Department of Medical education, Government of M. P. )

19 . Syllabus and scheme of examination shall be decided by the board of studies and Academic council of the university from time to time as per guidelines from M P Paramedical council.

20. In order to be an examiner a faculty member should have minimum three years of teaching experience and not below the rank of the Assistant Professor and /or Demonstrator / Tutor.

21. The examination papers (Theory) will be evaluated centrally at the university

22. The examiner who evaluates the theory copy preferably be appointed as the external for practical examinations for the said course.

23. Diploma students will be eligible for supplementary examination.



## SCHEME FOR FIRST YEAR

		Internal Assessment		University Examination			
Code	Title of Papers	Theory	Practical	Theory	Viva	Practical	Total
DMLT-101T	Anatomy and Physiology	50	50	100	50	50	300
DMLT-102T	Biochemistry	50	50	100	50	50	300
<b>TOTAL</b>							<b>600</b>

**Note:** - For passing the Candidate shall have to obtain 50%, marks separately in theory plus Internal Assessment and Practical plus Viva Voce plus Internal Assessment.

### **DIPLOMA IN MEDICAL LAB TECHNICIAN (DMLT)**

#### **PAPER-I: HUMAN ANATOMY & PHYSIOLOGY**

**Subject code-DMLT101**

#### **Syllabus Contents**

**Total structure:40**

A) Applied Anatomy & Physiology:

- Study of the structure of a cell

Normal anatomical structure, Histology & Functions (Physiology) of the following systems.

- The circulatory system (Heart– & Blood Vessels)



- The Respiratory system
- The Digestive system Liver & Pancreas Lymphatic system
- Urinary system Reproductive system – Male & Female
- Endocrine system
- Central nervous system (Brain & Spinal cord)

## **PRACTICAL Anatomy & Physiology**

### **ANATOMY: -**

- (1) Demonstration of parts of body and land marks on the surface.
- (2) The skeletal system Head & Neck.

### **Thorex And Abdomen:**

- Demonstration of various organs within thorex & abdomen.
- Respiratory systems, pleurae, heart, liver, gall bladder, peritoneum stomach & intestine
- Spleen, pancreas & parts of urinary system

### **GENERAL NERVOUS SYSTEM: -**

- Spinal level and site of lumbar puncture.
- Surface anatomy of important organs & blood vessels.
- Identification of models like those of Brain, Heart, embryology, Kidney.

### **DEMONSTRATION: -**

- Fixing, labeling & storage of specimens.
- Drawing diagrams & labeling.
- Demonstration of models, specimens & skeleton

### **PHYSIOLOGY: -**

- The microscope, its usage, cleaning & maintenance.
- Identification of blood cells under Microscope. RBC, various types of WBC, platelets, Reticulocytes.



# SARVEPALLI RADHAKRISHNAN UNIVERSITY, BHOPAL

NH-12, BEHIND NISSAN MOTORS, HOSHANGABAD ROAD, MISROD BHOPAL (M.P.)  
(Statutory University established under M.P. Act No. 17 of 2007 & Covered u/s 2 (f) of UGC Act)  
Website: www.srku.edu.in, E-Mail: info@srku.edu.in/srkubhopal@gmail.com

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- Preparation of anti coagulants. - Collection of blood samples to obtain plasma & serum samples.
  - Ruling area of Neubaur chamber.
  - Usage of RBC & WBC pipettes & wintergreen Pipette & Win robe tube.
  - Estimation of Hb, preparation of blood smears, staining.
  - Demonstration of blood pressure recording and pulse.
  - Determination of bleeding, clotting & prothrombin Time

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### PAPER- II: BIOCHEMISTRY

**Subject code-DMLT 102**

**Total No. of Hrs.:- 60 :-**

#### **Biochemistry:**

Biochemical structure of the following: (20 Hrs.)–

- a. Carbohydrates
- b. Proteins
- c. Lipids
- d. Enzymes

#### **Clinical Biochemistry: (20 Hrs.)–**

- a. Kidney function tests (Renal profile)
- b. Liver functions tests (Hepatic profile)
- c. Cardiac profile
- d. Lipid profile

**Estimation of: (20 Hrs.)–**



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- a. Blood sugar
- b. Blood Urea
- c. S. Cholesterol
- d. S. Uric Acid
- e. S. Creatinine
- f. Diff. S. Enzymes

## PRACTICAL

- (1) Demonstration of Kidney function test. Gastric function test & liver function test.
- (2) Demonstration of Enzyme Analysis - Acid and Alkaline phosphates, SGOT/SGPT. Lacticdehydrogenase, CPK.
- (3) Lipid profile.
- (4) Estimation of Blood/ serum- Glucose, G.T.T. Urea, creatinine, uric Acid, Cholesterol. Bill Rubin. protin & A/G Ratio, Glycosylated Hb.
- (5) demostration of semi automated, Fully automated Biochemical Analyzers.
- (6) Demonstration/ Exposure to Radioimmuno assay laboratory.
- (7) Visit to Laboratory of National Importance.

## SCHEME FOR SECOND YEAR

		Internal Assessment		University Examination				
Code	Title of Papers	Theory	Practical	Theory	Viva	Practical	Total	
DMLT-201T	HAEMATOLOGY	50	50	100	50	50	300	
DMLT-202T	MICROBIOLOGY	50	50	100	50	50	300	
TOTAL								600

**PAPER- III: Pathology –I : HAEMATOLOGY & BLOOD BANKING, CLINICAL PATHOLOGY & PARASITOLOGY**

**Subject code-DMLT 201**

**SYLLABUS CONTENTS**

**Total No. of Hrs.:-60**



## **HAEMATOLOGY: (15 Hrs.)**

- a. Composition of blood
- b. Collection of blood & anticoagulants
- c. Hb estimation, TRBC count – ANAEMIAS
- d. Preparation & staining of blood films
- e. Development of WBCS (Leukopoiesis)
- f. TWBC & DWBC count – LEUKAEMIAS
- g. Absolute values, ESR, PCV, Reticulocyte count
- h. Platelet count BT & CT
- i. LE cell preparation, sickling test, osmotic fragility
- j. Bone marrow examination.

## **BLOOD BANKING: (15 Hrs.)**

- a. Blood group – ABO system, Rh typing
- b. Cross matching, Coomb's test,
- c. Donor screening
- d. Blood transfusion & transfusion reactions
- e. Blood components

## **CLINICAL PATHOLOGY: (15 Hrs.)**

- a. Physical, chemical & microscopic examination of urine
- b. Stool examination
- c. Semen examination
- d. CSF exam. & other body fluids

## **PARASITOLOGY: (15 Hrs.)**



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a. Introduction

b. Parasites in Blood, stool & Urine

## **PRACTICAL**

- Hb estimation by sahli's method
- Reticulocyte count, Leucocyte count, Platelet count (TLC-DLC)
- ESR, PCV
- BT, CT, PT
- Blood Smear preparation and Staining (PBF)
- ABO blood grouping, & Rh typing
- Cross matching
- Coombs Test (Direct & Indirect method)
- Blood separation and blood component preparation
- Blood transfusion procedure.
- Urine, stool, & semen Examination

## **DIPLOMA IN MEDICAL LAB TECHNICIAN (DMLT)**

### **PAPER- IV: Pathology-II : MICROBIOLOGY & SEROLOGY HISTOLOGY & CYTOLOGY**

**Subject code-DMLT 202**

#### **SYLLABUS CONTENTS**

**Total No. of Hrs.:-60**

**Microbiology: (15 Hrs.)**

- a. Classification
- b. Morphology of Bacteria
- c. Culture & isolation of bacteria
- d. Gram positive & gram negative cocc
- e. Gram positive & Gram negative bacilli
- f. Anaerobic spore bearing bacilli





## **Serology: (15 Hrs.)**

- a. Antigen & Antibodies
- b. Diagnosis of syphilis – VDRL test
- c. RA test
- d. Diagnosis of Typhoid – Widal test
- e. Elisa test

## **HISTOLOGY: (15 Hrs.)**

- a. Fixatives
- b. Tissue processing, impregnation
- c. Block making
- d. Section cutting
- e. Types of Microtomes
- f. Basic staining of sections
- g. Collection of tissue for histology
- h. Method of Decalcification

## **CYTOLOGY: (15 Hrs.)**

- a. Techniques & equipments required
- b. Fixatives & staining procedure
- c. FNAC technique d. Pap's staining

## **PRACTICAL**

- Culture media preparation and Isolation.
- Gram staining
- ZN stain (AFB)
- WIDAL (Typhoid)
- VDRL (syphilis test)
- ELISA (Antigen – antibody reaction)
- RA test



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- Decalcification technique
- Tissue Processing method
- Block making and section cutting
- H & E Staining
- Pap staining.