

### RIMS Campus, Bariatu, RANCHI 834009

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### Theory Paper II (100 Marks)

Diploma in Medical Laboratory Technician (DMLT)

### Part A (50 Marks)

#### **Pathology**

- 1. Medical terminology in Pathology
- 2. Responsibilities of laboratory technician
- 3. Basics of Laboratory Principle and Procedures
- 4. Basics Knowledge about laboratory safety, laboratory accident and First aid
- 5. Specimens and method of collection
- 6. Automation in Pathology, Auto analyzer
- 7. Interpretation of laboratory finding
- 8. Laboratory Apparatus
  - (a)Structure of laboratory
  - (i) Glassware
  - (ii) Flasks
  - (iii) Beepers
  - (iv) Bottles
  - (v) Funnels
  - (vi) Cylinders
  - (vii) Tubes
  - (viii) Pipettes
  - (ix) Bunsen Burner
  - (x) Water bath
- 9. Laboratory Instruments: (A) Care and Maintenance
  - (B) Principle and working Knowledge
  - (i) Microscope
    - (a) Structure of Microscope
    - (b) Principle of Microscope
    - (c) Parts of Microscope adjustment
    - (d) Use of Microscope : Method of use, care, cleaning and Serving of microscope, Magnification, Resolving Power
    - (e) Special application of microscope
      - -Phase Contrast illumination
      - Dark ground illumination
      - Fluorescence
  - (ii)Caroni meter
  - (iii) Spectrophotometer
  - (iv) Balance/Weighing Scale
  - (v) Fridge



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10. Solutions

#### **Hematology**

- (i)Introduction to Hematology
- (ii) Specimen collection and laboratory preparation in Hematology
- (iii) Routine Hematological Tests
  - (a) Cell counts: WBC/RBS/Platelet counts
  - (b) Staining of Blood film:
  - (c) White cells and abnormal cells
     Differential count/ Monocytic Series/ lymphocytic series/Granulocytic series/ lenuowics
  - (d)Red cells seriesMorphology/Retoculocyte count/ESR/Packed cell volume (PCV)
  - (e)Hemoglobin estimation and Anemic Normal value of hemoglobin/ Estimate
- (iv) Special Hematological Test
- (v) Basic knowledge about blood coagulation/ Blood coagulation disorders
- (vi) Laboratory investigation is bleeding Disorders
- (vii) Prepration of anti coagulation
- (viii) Constituents and function of blood
- (ix)Plasma
- 3. Histopathology
  - (i)Introduction
  - (ii) Materials and equipments
  - (iii) Biopsy/ Autopsy
  - (iv) Collection, Preservation and lebeling of Specimens
  - (v) Procedure, grossing methods, Fixatives, Processing, embedding, section cutting, Staining, mounting & examination
- 5. Cytology
  - (i) Introduction
  - (ii) Laboratory technique is cytology
  - (iii) Procedure to obtain materials for
    - (a)Cytological study FNAC, Imprint Smear, vaginal Smear, Burccal smear and other Smear
    - (b)Preparation of fluid for cytological examination
    - (c) Procedure for staining and Mounting
    - (d) Examination of cytological slide
    - (e) Laboratory techniques in diagnostic exfoliative cytology



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- 6. Immunoehematology and Blood Banking
  - (i)Principle of immunoehematology
  - (ii) Clinical significance of blood transfusion
  - (iii) Collection and processing of blood for transfusion
  - (iv) Routine laboratory procedure in Blood Bank : ABO, RH blood group system

: Cross matching

(v) Blood donation

#### Part B (50 Marks )

- 1. Clinical Biochemistry
- (i) Normal and abnormal Biochemical Processes of the body
- (ii) Collection and Processing of Specimen for Biochemical analysis
- (iii) Automation in clinical Biochemistry Laboratory
- (iv) Routine Biochemical Tests
  - (a)Blood sugar
  - (b) Blood urea
  - (c) Serum protein
  - (d) serum Bitirutain
  - (e) Serum Cholesterol and lipid function Test
  - (f) Thyroid Function Test
  - (g) liver function Test

#### 2. Clinical Pathology

- (i)Urine analysis
- (ii) Lab examination of miscellaneous body fluids:

  Cerebrospinal fluid/ Synovial Fluid/ Pleural fluid/ Pertoneal Fluid / Pericardial Fluid
- (iii) Semen analysis
- (iv) Stool Examination

#### 3. Microbiology

Introduction to Diagnostic microbiology and microbiological technique
 (i)Basic Knowledge of Pathogenic organism, their isolation and identification



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#### (ii) Sterlisation

- (a)Definition
- (b) Methods Autoclave, Hot air oven, Tyndallisation, Pasteurisation, Filtration
- (iii) Disinfection and antisepsis
- (iv) Sterlisation of equipment, instrument and Laboratory
- (v) Care and maintenance of equipment
- (vi) Prepration of wire loop
- (vii) Prepration smaear
- (viii) Preparation of stains and different staining technique Simple/Grams /Acid fast/Albert's/ Frontana's /Negative Staining
- 2. Bacteriology
  - (i)Basic Knowledge of Bacteria and their classification
  - (ii) Diseases causes by Bacteria
  - (iii) Culture and antibody sensitivity of bacteria
  - (iv) Prepration of different media
  - (v) culture technique and antibody sensitivity testing
- 3. Mycology
  - (i)Basic Knowledge of fungi and their classification
  - (ii) Laboratory diagnosis of Pathogenic and opportunistic fungi
  - (iii) Collection, labeling of pathogenic and opportunistic fungi
  - (iv) Culture
- 4. Virology
  - (i)Basic Knowledge of Pathogenic viruses and their classification
  - (ii) Laboratory diagnostic technique

**PRACTICAL: 100 MARKS** 

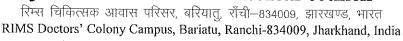
VIVA: 100 MARKS





# झारखण्ड राज्य पारामेडिकल परिषद

# Jharkhand State Paramedical Council





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सभी डिप्लोमा पाठ्यक्रमों का Paper-I, Common रहेगा, जबकी विषयवार Paper-II का सिलेबस अलग—अलग रहेगा।