

**ACADEMIC BOARD, AIMLTA**  
**SYLLABUS (COURSE CONTENTS) FOR PHLEBOTOMY**  
**THEORY (PAPER I)**

**HUMAN ANATOMY & PHYSIOLOGY**

- Introduction to Human Anatomy and Physiology. Anatomic terminology.
- Brief knowledge of nine body systems.
- Special knowledge of Circulatory, Lymphatic and Immune system.
- **Body Fluid Circulation:** (i) Introduction, Human blood, Blood volume, Composition of blood, Plasma and its function, Cellular content of blood, Hæmopoiesis (in brief), functions of RBCs and WBCs, Blood groups, Blood groups and donor compatibility, Blood transfusion, Hæmostasis (in brief).  
(ii) Blood Vascular System: Structure and pumping of human heart, Pulmonary and Systemic Circulation, Heart beat and pulse, Blood vessels, arteries, Arterioles.  
(iii) Capillaries, Venules, Veins, Vasa vasorum, Portal system.
- **Lymphatic System:** Lymph (Tissue fluid), Lymph composition, Lymph vessels, Lymphatic tissues, Lymphatic nodules, lymph nodes, Functions of Lymph and production of Lymphocytes (in brief).
- **Immune System:** Definitions – Immune system, Immunity, Types of immunity, Innate immunity; Lysozyme, phagocytic barriers, Histamine, prostaglandins, natural killer cells, Acquired (specific) immunity (T-Lymphocytes B-Lymphocytes), Cell-mediated immunity (Humoral); Agglutination, Opsonization, Neutralization.
- **Definitions:** Antigens, Allergens, Allergy, Anaphylaxis, Interferon, Inflammatory response.
- Antibodies (IgM, IgG, IgA, IgD, IgE) and their main functions.
- **Vaccination and Immunization:** Origin and development of vaccines. Some common vaccines (DPT-Hib, Hepatitis B, Salk, BCG, TAB etc.) and their time of administration and safety.

**SYLLABUS (COURSE CONTENTS) FOR PHLEBOTOMY**  
**PRACTICAL (PAPER II)**

**PHLEBOTOMY TECHNIQUES**

- Demonstration: Knowledge of control and safety.
  - Demonstration: Understanding of quality assurance.
  - Demonstration: Importance of specimen collection.
  - Demonstration: Methods of collection of various body fluids.
  - Demonstration: Knowledge of requisitioning specimen and proper transport.
  - Complications on phlebotomy.
  - Technical problems and Sample rejection.
  - Knowledge of sterilization.
  - Knowledge of collection equipment.
  - Knowledge of anticoagulants.
  - **Blood Collection:** Routine venipuncture and sample handling, Patient preparation, factors to consider in venous site selection, Difference between tendon and artery, Disinfection of the venous site, Application of tourniquet and precautions, Tourniquet tying location, Order of blood draw, Blood collection in anticoagulated tubes or bulbs, Post blood collection procedure, Disposal of puncturing unit, Patient after care, Prevention of hæmatoma, Causes of hæmolysis of blood specimen and other complication factors, Dispatch of specimen.
  - Venipuncture techniques using vacuum tubes, syringes and winged infusion sets.
  - **Dermal puncture:** Difference between venous and capillary blood, Dermal puncture equipment, Site selection and procedure.
  - **Blood collection in special populations:** Pediatric patients, geriatric patients, Special equipment used in Intensive Care Unit and the emergency room, Blood donation and infusions.
  - **Capillary blood collection:** To make peripheral smear – thick and thin smear (finger prick method), fixation of smear.
  - **Coagulation technique:** Bleeding time (Duke's methods), clotting time (Sabraze's capillary pipette method) and clotting time by slide method.
  - Basic knowledge of arterial puncture.
  - Preparation of Practical Record Book.
  - Biosafety and infection control, Medicolegal aspects
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