Blood Bank – Basic Requirements and Functions

What is a Blood Bank?

- A **blood bank** is a licensed medical facility where **blood is collected, tested, processed, stored, and distributed** for transfusion purposes.
- It plays a **critical role in emergency care**, surgeries, trauma, and treatment of diseases like anemia, cancer, and hemophilia.

Regulatory Framework:

- Governed under the **Drugs and Cosmetics Act, 1940**, and **Rules, 1945**.
- Blood is legally considered a **"drug"** under Section 3(b) of the Act.
- License is mandatory under **Rule 122-G** and **Schedule F, Part XII-B** of the Drugs Rules.

Functions of a Blood Bank

Function	Description
Collection	Voluntary or replacement donations
Testing	Mandatory screening for infectious agents
Component Preparation	RBCs, plasma, platelets, cryoprecipitate
Storage	Under controlled, monitored conditions
Distribution	Issuing blood to hospitals or patients with proper documentation
Counseling	Donor education, post-donation care
Quality Control	Regular calibration of equipment, internal audits

Basic Requirements for a Blood Bank

1. Infrastructure and Premises

- Clean, well-ventilated area with restricted entry.
- Separate zones for:
  - Donor area
  - Blood collection
  - Component preparation
  - Testing lab

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- Storage and refrigeration

2. Equipment

- Blood collection monitors
- Refrigerators and deep freezers (with temperature monitoring)
- Centrifuge (for component separation)
- Hemoglobinometer
- Serological water bath
- Autoclave
- ELISA or NAT testing equipment for infectious diseases

3. Personnel

- **Medical Officer**: Qualified doctor (MBBS with experience or specialized training in transfusion medicine).
- **Technicians**: Trained in blood grouping, cross-matching, component separation.
- **Pharmacists**: May be involved in storage, labeling, and inventory control of consumables and reagents.

4. Donor Selection and Consent

- Donor must be aged 18–65 years and meet medical criteria.
- Written **informed consent** required before collection.
- Donor health history and hemoglobin check mandatory.

5. Testing of Donated Blood

- Every unit must be tested for:
  - **HIV I & II**
  - **Hepatitis B (HBsAg)**
  - **Hepatitis C**
  - **Syphilis (VDRL)**
  - **Malaria**

6. Storage Requirements

- Whole blood: 2–6°C
- Platelets: 20–24°C with agitation
- Plasma: –30°C or lower

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7. Record-Keeping

- Maintain donor records, test results, stock of collected units, issued units.
- Records preserved for **at least 5 years**.

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