

Q3 a) ~~Ans~~ → Essential drug

→ Essential drugs, as defined by the World Health Organization, are the medicines that "Satisfy the priority health care needs of the population".

b) ~~Ans~~ → Hypertension

→ Hypertension, also known as high blood pressure

→ Hypertension is a long term medical condition in which the blood pressure in the arteries is persistently elevated.

→ It is not a disease in itself but is an important risk factor for cardiovascular mortality and morbidity.

Hypertension.

↑ Systolic BP
≥ 140 mmHg

↑ diastolic BP
≥ 90 mmHg

c) ~~Ans~~ → Bioavailability

→ The term bioavailability is defined as the rate and extent (amount) of absorption of unchanged drug from its dosage form

Drug bioavailability is generally in the following order.

Parenteral > Oral > Rectal > Topical

c. d.) Gout

→ Very painful form of arthritis characterized by the formation of Uric acid crystals and severe inflammation.

→ Gout is a metabolic disorder of purine metabolism, characterized by intermittent attacks of acute pain, swelling and inflammation.

e.) Erythrocyte

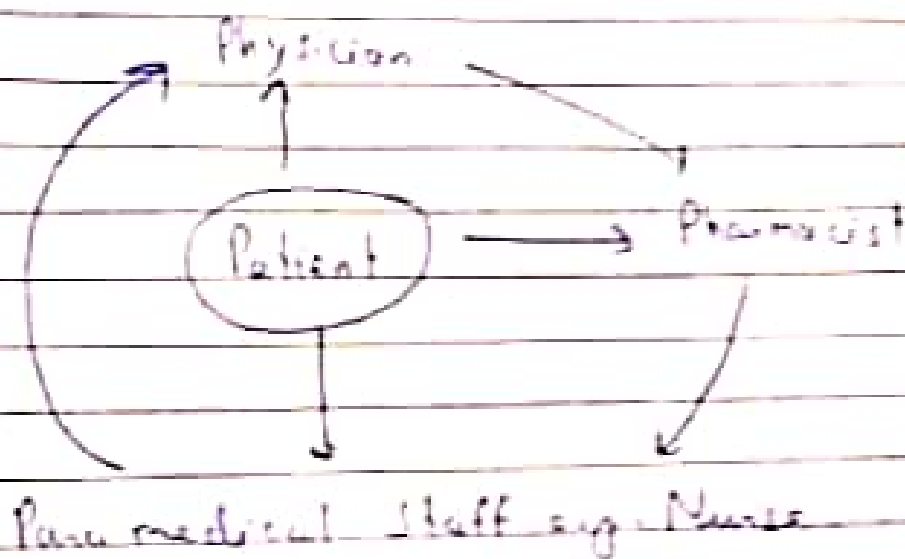
→ also called Red blood cells

→ Total R.B.C Count of blood is expressed as number of cells per mm³.

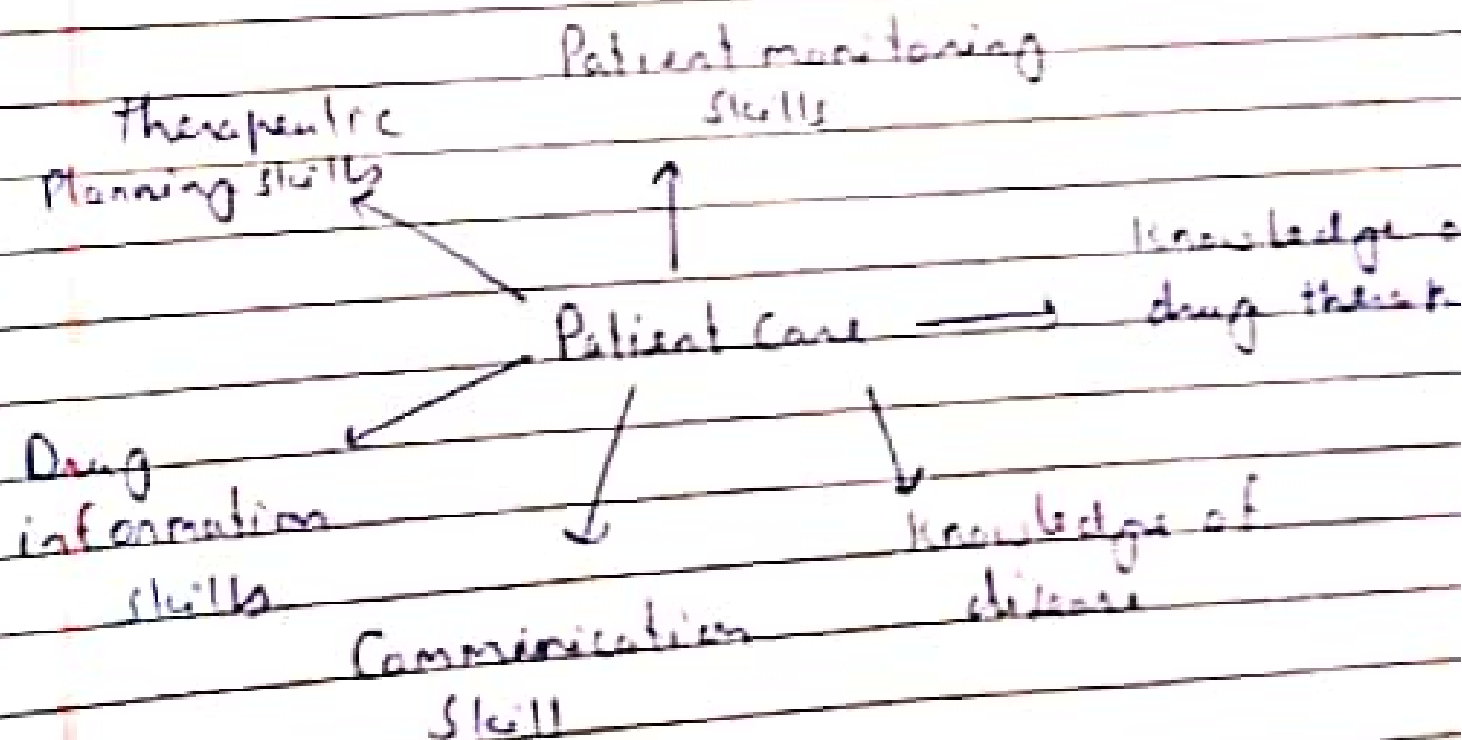
Types of Parameter	Men	Women	Children
1. R.B.C Count	4.5 to 5.5 million/mm ³	3.5 to 5.5 million/mm ³	4.00 to 5.5 million/mm ³

Q2. a) Clinical Pharmacy

→ Clinical pharmacy is the branch of pharmacy which deals with various aspects of patient care, dispensing of drugs and advising patients on the safe and rational use of drugs.



Clinical Pharmacy Requirement



Aim of Clinical Pharmacy

- The aim of the clinical pharmacy is to ensure the patient's maximum well-being and to play a meaningful role in the safe and rational use of drugs.

The main goals of Clinical pharmacy are:

1. To assist the physician in doing a better job of prescribing and monitoring drug therapy for the patient.
2. To assist medical and para-medical staff and documenting medication incidents correctly.
3. To maximise the patient's compliance in drug use process.

b) ~~As~~ → Myocardial Infarction

→ It is a common manifestation of ischaemic heart disease.

→ It results when there is imbalance between the supply and demand of oxygen to myocardium.

Pathophysiology.

- Ischaemic necrosis of a portion of myocardium occurs due to sudden occlusion of coronary artery by a blood clot.
- Narrowing of Coronary artery reduces the myocardial blood supply and ultimately the blood flow which results in ischaemic injury.
- It may occur in any location (left or right Ventricle) depending on which Coronary artery is occluded.
- It can be fatal and can lead to variety of complications.

Q3. Therapeutic drug monitoring.

- Therapeutic drug monitoring is defined as a "process of assessing concentration of drug in biological fluids such that it is maintained within the therapeutic range."
- It aims at individualizing the dose for a patient to obtain maximum benefit.
- TDM establishes safety and effectiveness of therapy.



Objective

- > obtaining maximum beneficial outcome of drug therapy by appropriate dosing of drugs.
- > TDM can provide an effective means of individualization of dosing of some drugs that have unpredictable dose-response relationship.
- > Dosage adjustment in patients with pre-existing hepatic or renal impairment and thus preventing drug accumulation in the body.
- > Providing medical advantage by reducing the chances of drug toxicity.

Congestive Heart failure

- Heart failure occurs when the heart cannot work as a pumping station to meet the metabolic demands of the tissues.
- Due to decreased blood flow, salt and water are retained by kidneys and fluid accumulates in the interstitial spaces, leading to congestive heart failure (CHF).

Pathophysiology.

- There are certain conditions which may lead to the heart failure:

1. Essential hypertension
2. Coronary artery disease
3. Hyperthyroidism.
4. Rheumatic heart disease.

In this capacity to develop force during systole is reduced and thus greater end diastolic volume is required to perform any level of work.

Rheumatoid Arthritis

- It is a chronic disease manifested by inflammation of joints. It may occur at any age, affecting either sex.
- Rheumatoid arthritis (RA) is an auto-immune disease in which there is joint inflammation, synovial proliferation and destruction of articular cartilage.

Pathophysiology

- It is an auto-immune disease.
- It is influenced by body immune system reaction towards certain body proteins.
- As they are foreign substances (antigens) and produce antibodies.
- It has been observed that patient's body considers human gamma globulin (IgG) as the antigen and produces antibodies for that rheumatoid factor. IgM, IgA, IgG are called as IgM Rheumatoid factor, IgA rheumatoid factor, IgG rheumatoid factor respectively.
- Antigen reacts with antibody to form an immune complex which then reacts with complement (proteins) and leads to inflammation.