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**Paper. Pharma 1**

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**Question no 3**

**Total body clearance :**

**Definition:clearance** is define as the hypothetical of volume body fluid contains drug from which the drug is removed or clear completely in a specific period of time

.It is expressed in ml/min and is a constant for any given plasma drug concentration

**Explanation :**

**1) Renal clearance :**

Is define as the volume of plasma that is cleared of drug per unit of time through the kidney.similar renal clearance may be define as a constant fraction of the bs in which the kidney is contained that excrated by the kidney per unit of time .more simply renal clearance is define as the urinary drug excretion rate divided by the plasma drug concentration

**2)physiologic/organ clearance**

Clearance may be calculated for any oxygen involved in the irreversible removal of drug from the body.many organ in the body have the capacity for drug eliminaton ,including drug excration and biotransformation

**Part 1**

**Drug elimination :**

Drug elimination refers to the irreversabal removal of drug from the body by all routes of elimination .drug elimination is ussullay divided into two major components.excreation and biotransformation

**.Renal Excretion**

**.Nonrenal Excretion of drug**

**1)Renal extraction of drug**

Drug may be excrated by the kidney by glomerular filtration(passive)or by tubular secretion (active) they may also be reabsorbed Frome the filtrate across the renal tubular epithelial lining ,ussully by passive diffusion

**Question no 1 :**

**Answer :**

**ROUTE OF DRUG ADMINISTRATION :**

**Definition:**

The route of drug administration is simply define is the path by which a drug is taken into the body for diagnosis prevention cure or treatment of various disease in disorder is called route of drug administration

**OR**

A route of administration is the path by which a drug or substance is brought into contact with the body

**Various rote of drug administration**

**1: sublingual/Buccal**

Some drugs are taken is smaller tablets which are held in the mouth buccal tablet or under the tongue sublingual tablets

**2: Oral route**

Oral administration is designated as per os (PO) which means to administer by mouth

the medication is swallowed and the drug is absorbed from the stomach and small intestine

**3: Enteral route**

When drug is placed directly in the GI tract

**4:Topical route**

This refers to external application of the drug to the surface for localized action

(a)skin:drug is applied as ointment cream,lotion,paste,powder etc

**Parenteral route:**

the parenteral route is adminstration can be performed by injection that is using a needle usually hypodermic needle and syring or by the insertion of any indwelling catheter

Parenteral route include many on the following below ,

**(A): Subcutaneous:**

Subcutaneous route might be used for the arm ,forearm,thigh and subscapular space

**(B):Intramuscular route**

Intramuscular route might be applied to the buttock,thigh and deltoid

**(C)Intravenous injection:**

**Intravenous injection might be applied to the cubital,basilic and cephalic veins**

**(D)intradermal route:**

**This route is mostly used for diganostic purposes and is involved in the following test**

**1)dick test for scarlet fever**

**2)shock test for deptheria**

**(E)Intracardiac route:**

**Injection can be applied to the left ventrical in case of cardiac arrest**

**(F)Intraperitoneal route:**

**May be used for the peritoneal dialysis**

**QUESTION NO: 2**

**Water compartments**

**Definition:** body fluid means body water along with its dissolved constituents

:It's constituents

55%of female total body weight

60% of male of total body weight

**Body fluid**

**Divided into two phases**

**1) Extracellular fluid**

It is simply means fluid outside the cell 1/3 volume of the fluid in body 33% of total body water

**Contain ion and nutrients need for cellular life**

**2)Intracellular fluid**

**Fluid inside the cell**

**2/3 volume of fluid in body(67% of total body water**

**Types of water compartment**

**There are three types**

**1) Intravascular compartment**

It contain fluid ( i.e blood) with in the cardiac chambers and vascular system of the body .the extra vascular system is every thing outside of the intravascular compartment.Fluid and electrolytes readily move between these two compartment

**2) interstitial compartment**

The human body and even it's individual body fluid may be conceptually divided into various fluid compartment which althoutht not laterally anatomic compartment ,do represent a reall division and terms of how portion of the body water,solutes and suspended elements

**3) Intracellular compartment**

Is the space within the organism cell.it is separated from the extra cellular compartment by cell membrane.above two thirds of the total body water of human is held in the cells mostly in the cytosol,and the remainder is found in the extracellular compartment

**( THE END)**