

LMS ID: 41998

Batch: 414

Campus: Islamabad Main

PART-II

(SECTION-A)

Questions 02.

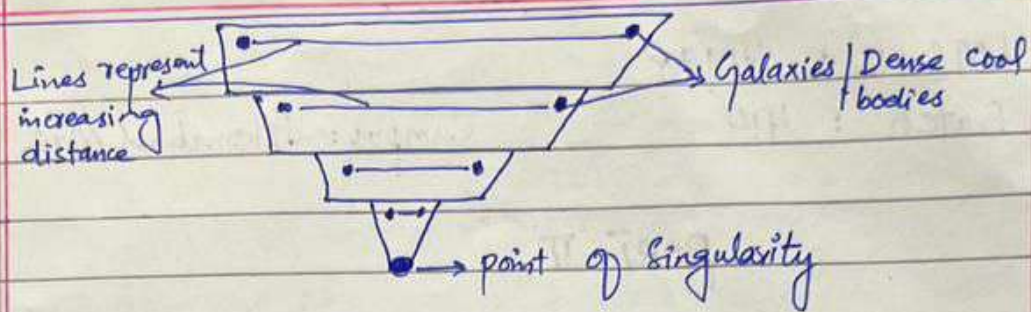
2. Describe the structure of universe according to big bang Theory.

Introduction:

The complete structure of the universe till date is undetermined as the universe is continuously expanding. However, the big bang theory stated how this expansion started about 13.8 billion years ago from an extremely hot and dense point where all the matter had gathered. This point is termed as singularity.

Expansion and cooling:

After the point of singularity blasted i.e. big bang, the universe expanded rapidly and gradually started cooling and allowing the energy to convert into matter, as the matter moved away from point of singularity.



Development of Large Structures:

As the matter moved away farther in space and cooled down, under the effect of gravity, matter condensed into stars and galaxies that grouped into shapes of clusters and superclusters.

Present Structure:

The big bang theory suggests that universe is still expanding and consists of galaxies, dark matter, dark energy and empty spaces. The expansion is evident and has been proved by the Hubble's Law which states that all the galaxies are moving away with certain receding speed evident by red shift.

Conclusion:

The big bang theory gave an assumption and explained that the universe is continuously evolving and expanding. Stars are being formed and are dying in organized expanding galaxies in cosmic systems.

b. Define urinary system and explain the working of nephron.

Definition:

The urinary system of the body is responsible for removing, as well as forming of urine from body with the purpose of filtration of blood.

Working of Nephron:

The nephron is the basic functional unit of a the kidney where the actual filtration of blood takes place in following parts within nephron:

1. Glomerulus.

As the blood enters from afferent arteriole into glomerulus it is filtered by removing water, salt, glucose and other small molecules into Bowman's capsule, this collected waste is called filtrate.

2. Tubular Reabsorption.

When the filtered blood flows out again it passes by renal tubules namely proximal convoluted tube from where useful substances such as glucose, water and ions are reabsorbed from into blood as per requirements so that body does not faces deficiency from excessive filtration.

3. Tubular Secretions:

All the excessive ions, water and metabolic wastes are separated from blood and sent to tubules for excretion.

4. Urine Formation.

The forming waste fluid that is remaining becomes urine which passes through the collecting duct to renal pelvis and then to ureter.

Conclusion:

The nephrons are the filtration plants in kidney where blood is filtered, reabsorption of essential materials occurs and then the formed waste is removed from proper channels.

c. What is un-balanced diet? How it affects the healthy living?

Unbalanced diet:

An unbalanced diet is one which lacks the proper portions of nutrients in it and affects a healthy body negatively.

The unbalanced diet does not provide the adequate amount of essential nutrients such as carbohydrates, proteins, fats and others, needed for proper functioning of body.

Effects on healthy living:
unbalanced diet causes

following effects -

1. Malnutrition:

It can lead to certain deficiencies like anemia which is from lack of iron or can lead to excesses.

2. Risk of disease.

Unbalanced diet raises the risk of chronic disease which can be fatal such as cardiovascular diseases.

3. Impaired Functions:

Unbalanced diet can result in weak immune system function and defective physical and mental growths specially in children.

d. Describe the structure and functions of cell wall, cell membrane, cytoplasm and mitochondria.

1. Cell wall:

a. Structure:

It is a rigid layer on outside of cell membrane, primarily found in plants. It is made up of cellulose

b. Function.

It provide structural support to

cell and maintains cell shape.

2. Cell membrane.

a. Structure:

It is a flexible semi permeable membrane on outer side of animal ^{plant} cell, which encloses cytoplasm.

b. Function:

It regulates as passing gate of cell and leaves substances in and out of cell.

3. Cytoplasm:

a. Structure:

It is a jelly-like substance inside cell membrane, around nucleus and contains: cell organelles

b. Function:

It is the place where metabolic reactions take place and it also helps in transport of materials.
