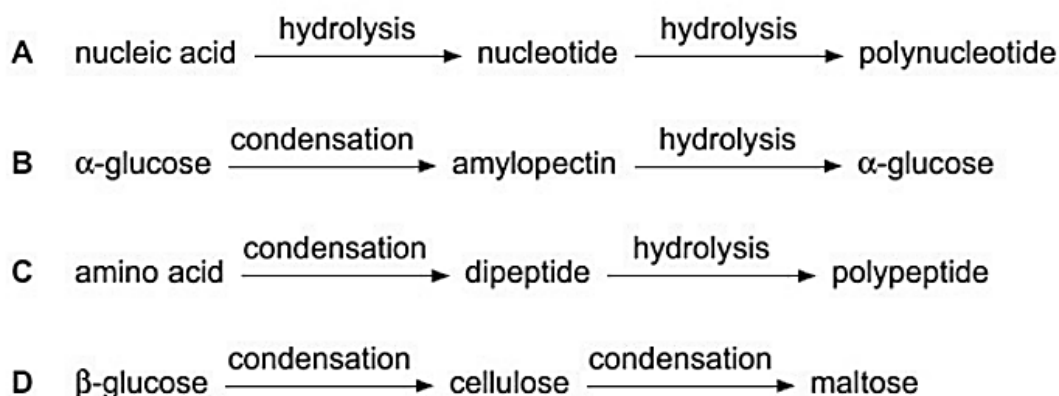


(MBC02-AKU-01H)

- The following are a series of organic molecules and the chemical processes that occur to convert them into different molecules. Which of the rows, A to D, is correct?



(MBC02-AKU-02M)

- Which of the following statements, A to D, about DNA replication is correct?
  - DNA polymerase breaks the hydrogen bonds between the two strands.
  - The distance between the strands in the double helix will always be the same.
  - The proportion of adenine in a nucleic acid will always equal the proportion of guanine.
  - The formation of phosphodiester bonds will occur in the same direction on each strand during DNA replication.

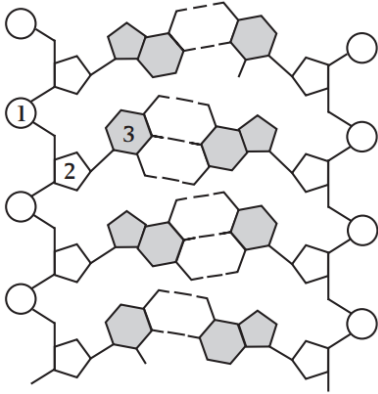
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(MBC02-AKU-03E)

- Which of the following foods contains the greatest amount of energy per gram?
  - Sugar
  - Starch
  - Fat
  - Proteins

(MBC02-AKU-04H)

- Which choice correctly identifies a component of the molecule shown below?



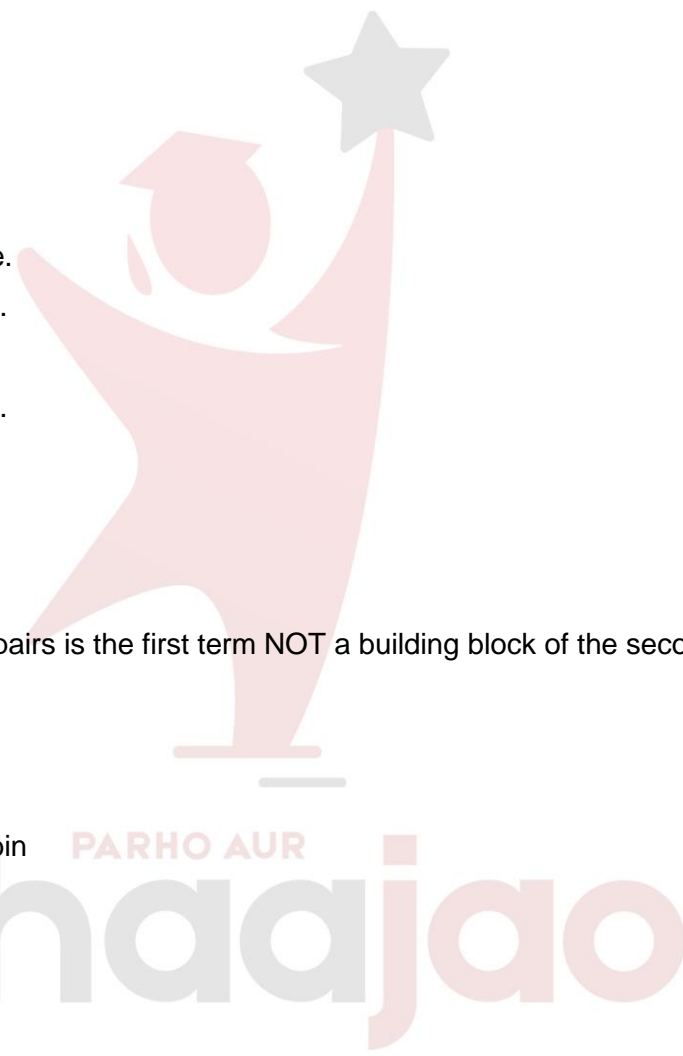
- A) 1 is a sugar.
- B) 2 is a nitrogenous base.
- C) 3 is a phosphate group.
- D) 3 is a sugar.
- E) 1 is a phosphate group.

(MBC02-AKU-05M)

- For which of the following pairs is the first term NOT a building block of the second term?
- A) Fatty acid—insulin
  - B) Glucose—chitin
  - C) Thymine—nucleotide
  - D) Amino acid—hemoglobin

(MBC02-AKU-06E)

- All of the following are correct about water EXCEPT
- A) water is a molecule
  - B) there is little attraction between water molecules
  - C) the covalent bonds between oxygen and hydrogen are polar or unbalanced
  - D) the reason that water and lipids do not mix is because water is a polar molecule while lipids are nonpolar
  - E) water has a relatively high heat of vaporization because of strong intermolecular attractions



(MBC02-AKU-07M)

- Which is NOT a characteristic of water?
  - A) Water has a high specific heat.
  - B) Water has a high heat of vaporization.
  - C) Water exhibits strong cohesion tension.
  - D) Water is less dense than ice.
  - E) Water is known as a universal solvent.

(MBC02-AKU-08H)

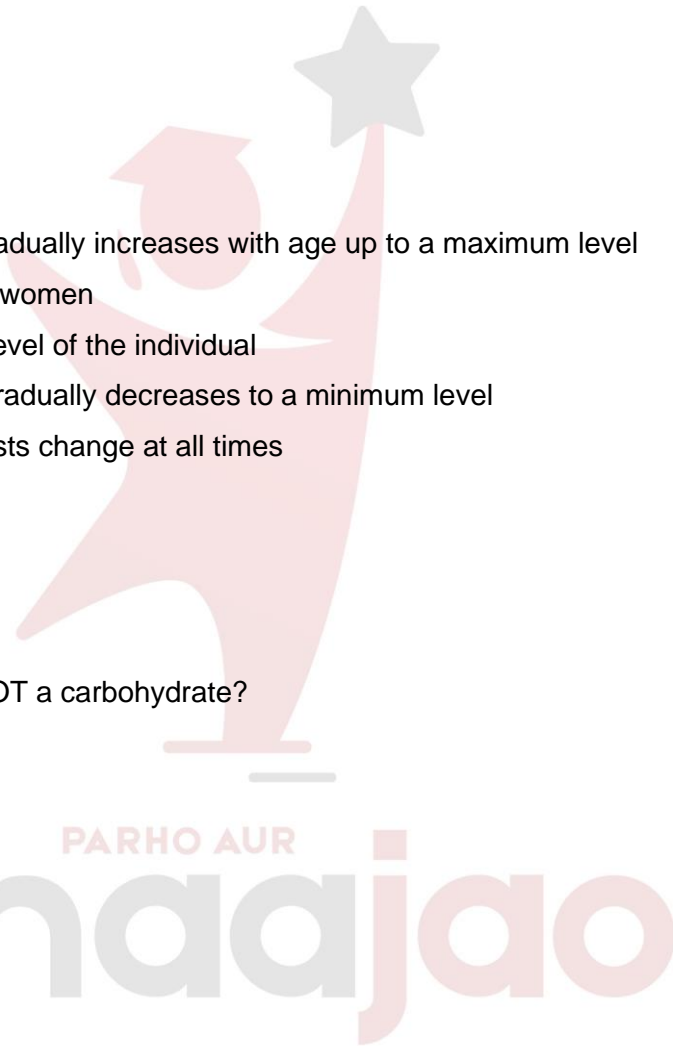
- The pH of blood in humans
  - A) is lowest at birth and gradually increases with age up to a maximum level
  - B) is different for men and women
  - C) varies with the activity level of the individual
  - D) is highest at birth and gradually decreases to a minimum level
  - E) is normally 7.4 and resists change at all times

(MBC02-AKU-09E)

- Which of the following is NOT a carbohydrate?
  - A) Glucose
  - B) Lactose
  - C) Insulin
  - D) Starch
  - E) Sucrose

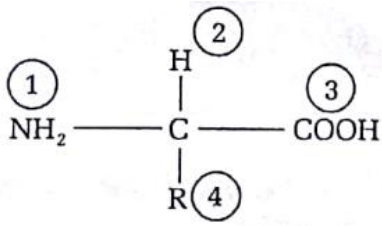
(MBC02-AKU-10E)

- How many fatty acid molecules are normally present in a fat or oil molecule?
  - A) 1
  - B) 2
  - C) 3
  - D) 4



(MBC02-AKU-11H)

- An amino acid has the following structure:



Which two of the groups combine to form a peptide link?

- A) 1 and 2
- B) 1 and 3
- C) 2 and 3
- D) 2 and 4

(MBC02-AKU-12M)

- Most polysaccharides are composed of chains of condensed
  - A) cellulose units.
  - B) hexose units.
  - C) pentose units,
  - D) sucrose units.

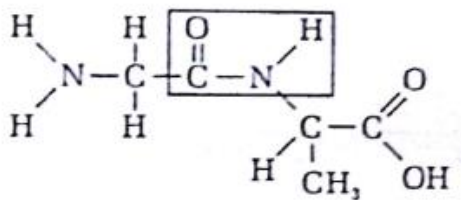
(MBC02-AKU-13E)

- Which of the following is a complex of globular. Protein with non-proteinaceous material?
  - A) collagen
  - B) hemoglobin
  - C) egg albumen
  - D) fibrinogen

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(MBC02-AKU-14H)

- The diagram shows a molecular structure.

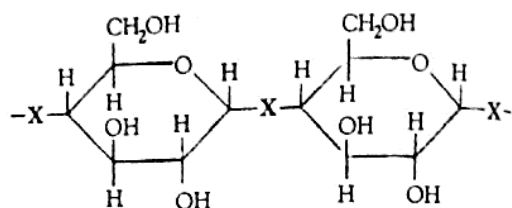


What is the structure enclosed by a box?

- A) an amino acid
- B) a glycosidic bond
- C) a nucleotide
- D) a peptide bonds

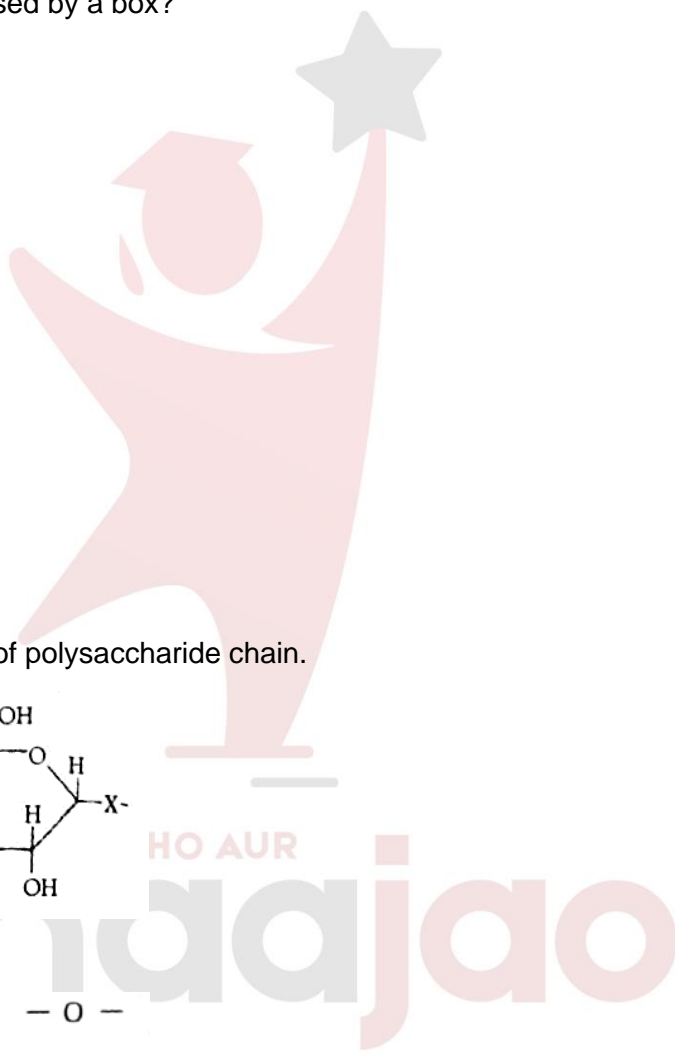
(MBC02-AKU-15H)

- The diagram shows a part of polysaccharide chain.



What type of bond is X?

- A  $\begin{array}{c} -C- \\ || \\ O \end{array}$
- B  $-O-$
- C  $-S-$
- D  $\begin{array}{c} -N- \\ | \\ H \end{array}$



Answer key	
1	B
2	B
3	C
4	E
5	A
6	B
7	D
8	E
9	C
10	C
11	B
12	B
13	B
14	D
15	B

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