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1. Identify the purine base of nucleic acids in the following

- a) Cytosine
- b) Thymine
- c) Uracil
- d) Adenine

View Answer

Answer: d

Explanation: Purines have two rings in their structure, but pyrimidine bases have only one ring.

Adenine has two rings in its structure.

2. Which of the following are not the components of RNA?

- a) Thymine
- b) Adenine
- c) Guanine
- d) Cytosine

View Answer

Answer: a

Explanation: Thymine is present in DNA but not in RNA.

3. Which of the following statements is true?

- a) Sugar component of a nucleotide is ribose
- b) Sugar component of a nucleotide is deoxyribose
- c) The bases in nucleotides are attached to a pentose sugar moiety by a glycosidic linkage
- d) The sugar molecule of the nucleotide is in L-configuration

View Answer

Answer: c

Explanation: Sugar component of a nucleotide may be ribose or deoxyribose.

4. What is the composition of nucleoside?

- a) a sugar + a phosphate
- b) a base + a sugar
- c) a base + a phosphate
- d) a base + a sugar + phosphate

View Answer

Answer: b

Explanation: A nucleoside is composed of a base and a sugar.

5. What is the composition of nucleotide?

- a) a sugar + a phosphate
- b) a base + a sugar
- c) a base + a phosphate
- d) a base + a sugar + phosphate

View Answer

Answer: d

Explanation: A nucleotide is composed of a base, a sugar and a phosphate.

6. Group of adjacent nucleotides are joined by

- a) Phosphodiester bond
- b) Peptide bond
- c) Ionic bond
- d) Covalent bond

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7. The sugar molecule in a nucleotide is

- a) Pentose
- b) Hexose
- c) Tetrose
- d) Triose

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Answer: a

Explanation: Ribose or deoxyribose is a 5 carbon sugar.

8. Which of the following is true about phosphodiester linkage?

- a) 5'-phosphate group of one nucleotide unit is joined to the 3'-hydroxyl group of the next nucleotide
- b) 3'-phosphate group of one nucleotide unit is joined to the 5'-hydroxyl group of the next nucleotide
- c) 5'-phosphate group of one nucleotide unit is joined to the 5'-hydroxyl group of the next nucleotide
- d) 3'-phosphate group of one nucleotide unit is joined to the 3'-hydroxyl group of the next nucleotide

View Answer

Answer: a

Explanation: 5'-phosphate group of one nucleotide unit is joined to the 3'-hydroxyl group of the next nucleotide.

9. Which of the following is false about purine and pyrimidine bases?

- a) They are hydrophobic and relatively insoluble in water at the near-neutral pH of the cell
- b) At acidic or alkaline pH the bases become charged and their solubility in water increases
- c) Purines have two rings in their structure, but pyrimidine bases have only one ring
- d) At acidic or alkaline pH the bases become charged and their solubility in water decreases

View Answer

Answer: d

Explanation: At acidic or alkaline pH the bases become charged and their solubility in water increases.

10. Building blocks of nucleic acids are

- a) Nucleotides
- b) Nucleosides
- c) Amino acids

d) Histones

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Answer: a

Explanation: Nucleotides are the building blocks of nucleic acids.