



# BIOLOGY

## BOOKS - TRUEMAN BIOLOGY

### NCERT Exemplar Questions +1 (BIOMOLECULES )

#### Mcqs

1. It is said that elemental composition of living organisms and that of inanimate objects

(like earth's crust ) are similar in the sense that all the major elements are present in both. Then what would be the difference between these two groups ?

Choose a correct answer from the following.

A. Living organisms have more gold in them than inanimate objects

B. Living organisms have more water in their body than inanimate objects

C. Living organisms have more carbon, oxygen and hydrogen per unit mass

than inanimate objects

D. Living organisms have more calcium in them than inanimate objects

**Answer: c**



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2. Many elements are found in living organisms either free or in the form of compounds. One of the following is not found in living organisms.

A. Silicon

B. Magnesium

C. Iron

D. Sodium

**Answer: a**



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**3.** Aminoacids, as the name suggests, have both an amino group and a carboxyl group in their structure. In addition, all naturally

occurring aminoacids (those which are found in proteins) are called L-aminoacids. From this, can you guess from which compound can the simplest aminoacid be made

A. Formic acid

B. Methane

C. Phenol

D. Glycine

**Answer: b**



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4. Many organic substances are negatively charged e.g., acetic acid, while others are positively charged e.g., ammoniumion. An aminoacid under certain conditions would have both positive and negative charges simultaneously in the same molecule. Such a form of aminoacid is called

A. Positively charged form

B. Negatively charged form

C. Neutral form

## D. Zwitterionic form

**Answer: d**



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5. Sugars are technically called carbohydrates, referring to the fact that their formulae are only multiple of  $C(H_2O)$ . Hexoses therefore have six carbons, twelve hydrogens and six oxygen atoms. Glucose is a hexose. Choose from among the following another hexose.

A. Fructose

B. Erythrose

C. Ribulose

D. Ribose

**Answer: a**



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6. When you take cells or tissue pieces and grind them with an acid in a mortar and pestle, all the small biomolecules dissolve in



the acid. Proteins, polysaccharides and nucleic acids are insoluble in mineral acid and get precipitated. The acid soluble compounds include amino acids, nucleosides, small sugars etc. When one adds a phosphate group to a nucleoside one gets another acid soluble biomolecule called

- A. 1) Nitrogen base
- B. 2) Adenine
- C. 3) Sugar phosphate
- D. 4) Nucleotide

**Answer: d**



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7. When we homogenise any tissue in an acid the acid soluble pool represents

- A. cytoplasm
- B. cell membrane
- C. nucleus
- D. mitochondria

**Answer: a**



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**8.** The most abundant chemical in living organisms could be

A. 1)protein

B. 2)water

C. 3)sugar

D. 4)nucleic acid

**Answer: b**



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9. A homopolymer has only one type of building block called monomer repeated 'n' number of times. A heteropolymer has more than one type of monomer. Proteins are heteropolymers made of amino acids. While a nucleic acid like DNA or RNA is made of only 4 types of nucleotide monomers, proteins are made of

- A. 20 types of monomers
- B. 40 types of monomers
- C. 3 types of monomers
- D. Only one type of monomer

**Answer: a**



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**10.** Proteins perform many physiological functions. For example, some proteins function as enzymes. One of the following

represents an additional function that some proteins perform

A. antibiotics

B. pigment conferring colour to skin

C. pigments making colours of flowers

D. hormones

**Answer: d**



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11. Glycogen is a homopolymer made up of

A. Glucose units

B. Galactose units

C. Ribose units

D. Amino acids

**Answer: a**



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12. The number of 'ends' in a glycogen molecule would be

A. 1) equal to the number of branches plus

one

B. 2) equal to the number of branch points

C. 3) one

D. 4) two, one on the left side and another

on the right side

**Answer: a**





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13. A pure protein should normally have

A. two ends

B. one end

C. three ends

D.

**Answer: a**



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**14.** Enzymes are biocatalysts. They catalyse biochemical reaction. In general they reduce activation energy of reactions. Many physico-chemical processes are enzyme mediated. Some examples of enzyme mediated reactions are given below. Tick the wrong entry

A. Dissolving  $CO_2$  in water

B. Untwining the two strands of DNA

C. Hydrolysis of sucrose

D. Formation of peptide bond

**Answer: d**



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