

BIO202 Current Solved

02 SEPTEMBER (2018)

1. Enzyme Kinetics.

Enzyme Kinetics. **Enzymes** are protein catalysts that, like all catalysts, speed up the rate of a chemical reaction without being used up in the process. They achieve their effect by temporarily binding to the substrate and, in doing so, lowering the activation energy needed to convert it to a product.

2. Acrolein Test

Acrolein test. **Acrolein test** is used to detect the presence of glycerol or fat. When fat is treated strongly in the presence of a dehydrating agent like potassium bisulphate (KHSO₄), the glycerol portion of the molecule is dehydrated to form an unsaturated aldehyde, **acrolein** that has a pungent irritating odour

3. Nucleotides Composition

Nucleotides are the building blocks of **nucleic** acids; they are composed of three subunit molecules: a **nitrogenous base**, a five-carbon sugar (ribose or **deoxyribose**), and at least one **phosphate** group. A nucleoside is an **nitrogenous base** and a 5-carbon sugar.

4. Hydrogenation Of Fats

Hydrogenation converts liquid vegetable oils into solid or semi-solid **fats**, such as those present in margarine. Changing the degree of saturation of the **fat** changes some important physical properties, such as the melting range, which is why liquid oils become semi-solid.

5. N Glycosidic Bond

A glycosidic bond or glycosidic linkage is a type of covalent bond that joins a carbohydrate molecule to another group, which may or may not be another carbohydrate

6. Enzymes Classification?

There were six classes of **enzymes** that were created so that **enzymes** could easily be named. These classes are: Oxidoreductases, Transferases, Hydrolases, Lyases, Isomerases, and Ligases. This is the international **classification** used for **enzymes**.

7. Primary Structure Of DNA

In **DNA** double helix, the two strands of **DNA** are held together by hydrogen bonds. The nucleotides on one strand base pairs with the nucleotide on the other strand. The secondary **structure** is responsible for the shape that the nucleic acid assumes. The bases in the **DNA** are classified as purines and pyrimidines.

8. Nucleotide?

Nucleotides are organic molecules that serve as the monomer units for forming the nucleic acid polymers deoxyribonucleic acid and ribonucleic acid, both of which are essential biomolecules within all life-forms on Earth

9. Tags Physical Properties?

Physical properties • Neutral fats are 1. colourless, 2. odorless and 3. tasteless substances

10. Buffer Defn And Its Composition?

A **buffer** solution (more precisely, pH **buffer** or hydrogen ion **buffer**) is an aqueous solution consisting of a mixture of a weak acid and its conjugate base, or vice versa. Its pH changes very little when a small amount of strong acid or base is added to it.

11. Nucleic Acid Medical Application?

Applications of nucleic acid testing in diagnosis and therapy. **Nucleic acid** testing or **nucleic acid** amplification testing, often abbreviated as NAT or NAAT, is a technique that involves amplification and detection of genetic material—the **nucleic acids**, DNA or RNA—for diagnosis or to provide guidance on therapy.

12. Write The Composition Of Triacylglycerols?

The Chemistry of Triglycerides. A triglyceride is a lipid molecule made up of one unit of **glycerol** and three **fatty acids**, hence the tri- prefix, which means three. A triglyceride looks a little bit like a creature with three tails. The head is **glycerol**, which is a simple sugar alcohol compound.

13. Write Two Examples Of Cyclic Nucleotide?

Cyclic nucleotide has three components. It contains a nitrogenous base (meaning it contains nitrogen): for **example**, adenine in cAMP and guanine in cGMP. It also contains a sugar, specifically the five-carbon ribose. And finally, a **cyclic nucleotide** contains a

phosphate.

14. Differentiate Between Oxidative And Hydrolytic Rancidity?

Oxidative rancidity is a natural process that affects fats and oil.

Hydrolytic rancidity refers to the odor that develops when triglycerides are hydrolyzed and

free fatty acids are released. This reaction of lipid with water may require a catalyst, leading to

the formation of free fatty acids and glycerol. In particular, short-chain fatty acids, such as

butyric acid, are malodorous

15. What Do You Know About Km Of Micheals Menten Equation?

In biochemistry, Michaelis–Menten kinetics is one of the best-known models of enzyme kinetics.

It is named after German biochemist Leonor Michaelis and Canadian physician Maud Menten.

The **Michaelis-Menten equation** can then be rewritten as $V = K_{cat} [\text{Enzyme}] [S] / (K_m +$

$[S])$. K_{cat} is equal to K_2 , and it measures the number of substrate molecules "turned over" by

enzyme per second. ... Taking the reciprocal of both side of the **Michaelis-Menten equation** gives: To determined the values of K_M and V_{max} .

16. Write Three Functions Of Cgmp?

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17. Write Hydrogenation Process With Respect To Fats?

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18. Write Five Properties Of Nitrogenous Bases?

1. **Tautomerism:** • All these bases can exist in keto-enol or amine-imine form. • At physiologic pH keto and amine form is predominant.

2. **UV light absorbance:** The conjugated double bonds of purine and pyrimidine derivatives

absorb ultraviolet light

3. **Hydrophobicity:** • The purine and pyrimidine bases are hydrophobic and relatively

insoluble in water at the nearneutral cell pH

4. **Weak Bases:** Purines or pyrimidines with an – NH₂ group are weak bases

5. **Heterocyclic:** • They are heterocyclic i.e. structures that contain other atoms in addition

to carbon, such as nitrogen in the ring structure

6. **Aromatic:** The Nitrogen containing bases are aromatic i.e. they have alternate double bonds

19. What Are Enzymes? Write Its Classification With Example?

A several complex protein that are produced by cell and act as catalysts by

specific biochemical reaction.

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20. Five Properties Of Waxes?

Waxes are insoluble in water, but • soluble in fat solvents and are • negative for acrolein test. •

very resistant to rancidity. Waxes are not easily hydrolyzed as the fats • and are indigestible by

lipases (enzymes responsible for fat digestion in body) • Thus they are of no nutritional value

21. Role Of Nucleotides As Coenzyme And Intermediate Carrier?

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22. Difference Between Thymine And Uracil?

Thymine becomes thymidine and deoxythymidine, Thymine is 2,4-dioxy-5- methyl-pyrimidine,

Thymine (T)—only in DNA. Uracil (U) becomes uridine and deoxyuridine, Uracil is 2,4-

dioxypyrimidine, Uracil (U) —only in RNA. T and U differ by only one methyl group, which is

present on T but absent on U.

23. Characters Of Vldl?

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24. Bee Wax?

Bees-wax is secreted by the honeybees that use it to form the combs. • It is a mixture of waxes

• chief constituent is myricyl palmitate

25. tRNA?

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26. Spermaceti

Spermaceti • is a wax that is most often found in the head cavities of the sperm whale. • Fatty

esters are formed essentially of • cetyl palmitate and • cetyl myristate. It was used in cosmetics,

pharmacy and also in candles • recent international regulation concerning whale captures, has

stopped its use. It is now replaced by synthetic cetyl palmitate.

27. Lipoxins

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28. Lipoprotein

Combinations of lipid and protein (lipoproteins) serve as the means of transporting lipids in the blood. Importantly, lipids provide the hydrophobic barrier that permits partitioning the aqueous contents of cells and subcellular structures as; phospholipids and sterols are the major structural elements of biological membranes.

29. Examples Of Coenzymes?

FAD, (Flavin Adenine Dinucleotide), NAD⁺ (Nicotinamide adenine Dinucleotide) and NADP⁺

(Nicotinamide adenine Dinucleotide Phosphate)

30. Properties Of Glycerol

It has the following properties: • Colorless • Viscous oily liquid with • sweet taste.

Thankful to Muzammil Hussain for such a great work. (Talha)