

ORGANIC PRACTICE TEST 2 QUESTIONS

1. Draw structural formulae for the following:

(a) 1-propanamine

/2

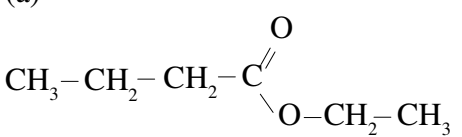
(b) 2-butanone

/2

(c) potassium hexanoate

/2

2. Systematically name the following:

| | | |
|---|---|--|
| (a)  | (b) $\begin{array}{c} \text{CH}_3 - \text{CH} - \text{CH}_2 - \text{OH} \\ \\ \text{OH} \end{array}$ | (c) $\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_3 - \text{C} = \text{CH}_2 \end{array}$ |
| /2 | /2 | /2 |

3. Consider the compound in 2 (c)

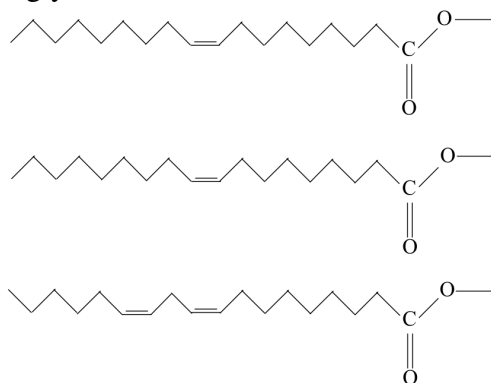
(a) Predict what you would observe if bromine water were added to a sample of the compound.

/1

(b) Identify the functional group responsible for the observation, and explain how it reacts.

/2

4. The structural formula of one triglyceride molecule is shown in the diagram below:



(a) Explain the effect of the alkene groups present on the melting point of the triglyceride above.

/3

(b) Identify a likely source of a triglyceride that is liquid at 25°C.

/1

(c) Identify the reactants and conditions that are necessary to convert an oil into a fat.

/2

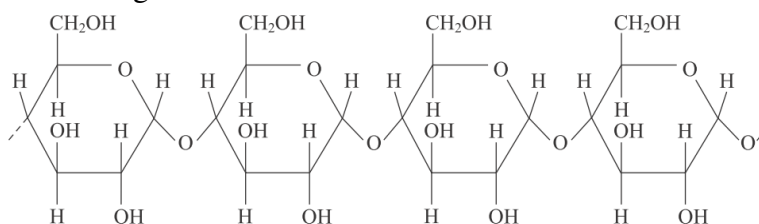
(d) Draw the structural formula of a fatty acid formed by hydrolysis of the triglyceride shown above.

/1

(e) State whether the fatty acid in 4(d) would decolourise a solution of iodine.

/1

5. Starch can be hydrolysed to form glucose. Consider a section of starch shown below:



(a) State whether starch is a monosaccharide, disaccharide or polysaccharide.

/1

(b) Draw the structural formula for the glucose monomer produced from starch.

/2

(c) State and explain whether glucose is soluble in water.

/2

(d) Write an equation for the conversion of starch into glucose.

/2

(e) State why glucose is classified as a carbohydrate.

/1

(f) State and explain whether the glucose monomer of 5 (b) will react with ammoniacal silver nitrate.

/2

(g) Glucose can be converted into ethanol. Name this process.

/1

(h) Write an annotated equation for the conversion of glucose into ethanol.

/3

(i) Describe how the rate of reaction of 5 (h) changes as temperature increases.

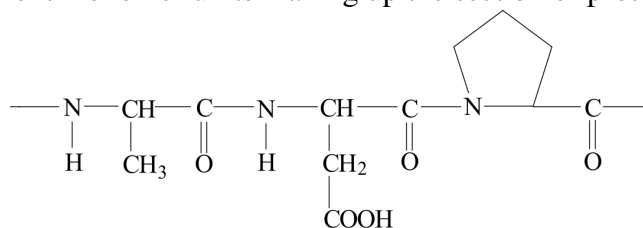
/2

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6. An alcohol and carboxylic acid will react together under the right conditions to produce an ester and water.
- (a) Name the type of reaction described. /1
- (b) State the purpose of adding sulfuric acid to the reaction described. /1
- (c) State the products of hydrolysis of compound 2 (a) under acidic conditions. /2
- (d) Draw the structural formula of the products of alkaline hydrolysis of compound 2 (a). /2
- (e) Explain why drugs are often administered in the form of sodium salts rather than in molecular form. /2
7. Briefly describe a method for the separation of a mixture containing a ketone and a carboxylic acid, if neither are soluble in water and they have similar boiling points. /3

8.

- (a) Name the monomer units that are joined to make proteins /1
- (b) State the number of different monomer units making up the section of protein shown below: /1



- (c) Circle a peptide link in the protein above. /1
- (d) Draw the structural formula of one of the monomers used to make up the protein above. /2

TOTAL /52