

C7 Quick Revision Questions

H = Higher tier only

SS = Separate science only

Question 1 of 50

- What does a finite resource mean?

Answer 1

.... of 50

- A resource that is being used up quicker than it is being replaced.

Question 2

.... of 50

- What is a non-renewable resource?

Answer 2

.... of 50

- A resource that is no longer being made.

Question 3

.... of 50

- What is crude oil made from?

Answer 3

.... of 50

- Plankton and other ancient biomass compressed in mud over millions of years

Question 4

.... of 50

- What is a hydrocarbon?

Answer 4

.... of 50

- A molecule made from ONLY hydrogen and carbon

Question 5

.... of 50

- Name the first 4 hydrocarbons of the alkane homologous series.

Answer 5

.... of 50

- Methane
- Ethane
- Propane
- Butane

Question 6

.... of 50

- State the formula and the displayed formula for methane

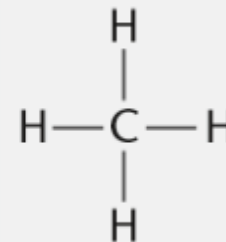
Answer 6

.... of 50

Methane

1

CH₄



Question 7

.... of 50

- State the formula and the displayed formula for ethane

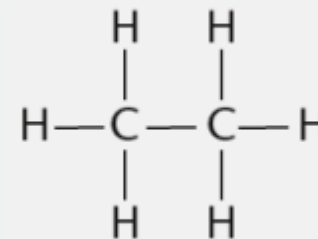
Answer 7

.... of 50

Ethane

2

C_2H_6



Question 8

.... of 50

- State the formula and the displayed formula for propane

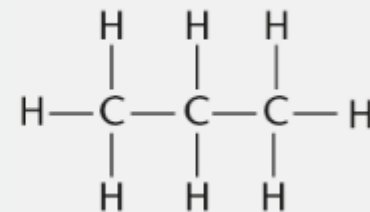
Answer 8

.... of 50

Propane

3

C_3H_8



Question 9

.... of 50

- State the formula and the displayed formula for butane

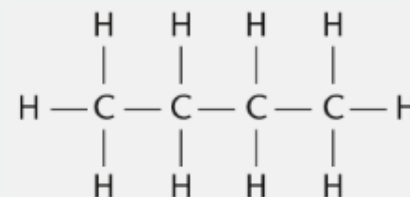
Answer 9

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Butane

4

C_4H_{10}



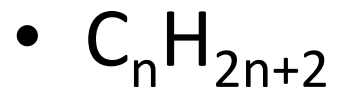
Question 10

.... of 50

- What is the general formula for an alkane?

Answer 10

.... of 50



Question 11

.... of 50

- What process separates crude oil?

Answer 11

.... of 50

- Fractional distillation

Question 12

.... of 50

- What property of hydrocarbons is used to separate crude oil?

Answer 12

.... of 50

- Boiling point

Question 13

.... of 50

- List the fractions of crude oil in order starting with the largest hydrocarbons

Answer 13

.... of 50

- Bitumen
- Fuel Oils
- Heating Oil
- Diesel
- Paraffin
- Petrol
- LPG

Question 14

.... of 50

- Describe the temperature gradient of the of the fractionating column

Answer 14

.... of 50

- Hotter at the bottom, cooler at the top

Question 15

.... of 50

- Where would fractions with lower boiling points exit the column (such as LPG)

Answer 15

.... of 50

- The top

Question 16

.... of 50

- Why does Bitumen exit at the bottom of the tower?

Answer 16

.... of 50

- Bitumen does not boil in the tower, it sinks as a thick liquid to the bottom of the tower.

Question 17

.... of 50 **H**

- Why do long chained hydrocarbons have high boiling points?

Answer 17

.... of 50

- Long hydrocarbon chains have more intermolecular forces which requires more energy to break.

Question 18

.... of 50 **H**

- What happens when hydrocarbon chains are heated to boiling point?

- Weak intermolecular forces between the hydrocarbon chains are broken (not the strong covalent bonds between carbon and hydrogen atoms)

Question 19

.... of 50

- List 3 important properties of a fuel which are related directly to their use

Answer 19

.... of 50

- Boiling point
- Viscosity
- flammability

Question 20

.... of 50

- What determines the boiling point, flammability and viscosity of a hydrocarbon?

Answer 21

.... of 50

- The size of the hydrocarbon molecule

Question 22

.... of 50

- What is the relationship between hydrocarbon size and viscosity?

Answer 22

.... of 50

- As the hydrocarbon size increases, the viscosity increases.

Question 23

.... of 50

- What is the relationship between hydrocarbon size and boiling point?

Answer 23

.... of 50

- As the hydrocarbon size increases, the boiling point increases.

Question 24

.... of 50

- What is the relationship between hydrocarbon size and flammability?

Answer 24

.... of 50

- As the hydrocarbon size increases, the flammability decreases.

Question 25

.... of 50

- What are the products of complete combustion of a hydrocarbon fuel?

Answer 25

.... of 50

- Carbon Dioxide and Water

Question 26

.... of 50

- What is incomplete combustion?

Answer 26

.... of 50

- When a fuel burns in short supply of oxygen

Question 27

.... of 50

- Which releases more energy from the same fuel, complete or incomplete combustion?

Answer 27

.... of 50

- Complete combustion

Question 28

.... of 50

- Write a balanced equation for the complete combustion of ethane

Answer 28

.... of 50



Question 29

.... of 50

- What is incomplete combustion?

Answer 29

.... of 50

- When a fuel burns in a limited supply of oxygen

Question 30

.... of 50

- What are the products of the incomplete combustion of hydrocarbons?

Answer 30

.... of 50

- Water
- carbon monoxide
- carbon

Question 31

.... of 50

- Why does incomplete combustion produce a yellow flame?

Answer 31

.... of 50

- Carbon (soot) appears yellow when burning in the flame

Question 32

.... of 50

- Why is carbon monoxide toxic?

Answer 32

.... of 50

- Carbon monoxide attaches to haemoglobin in the red blood cells preventing oxygen from being delivered around the body

Question 33

.... of 50

- What is the solution to the supply and demand problem of petrol?

Answer 33

.... of 50

- Cracking

Question 34

.... of 50

- What is cracking?

Answer 34

.... of 50

- Large hydrocarbon chains are broken down in to smaller more useful chains

Question 35

.... of 50

- What conditions are needed for cracking?

Answer 35

.... of 50

- Catalyst
- High temperature

Question 36

.... of 50

- What are the products of cracking?

Answer 36

.... of 50

- Short chained alkanes
- Short chained alkenes

Question 37

.... of 50

- What is the test for an alkene?

Answer 37

.... of 50

- Alkenes turn bromine water from orange to colourless

Question 38

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- What is an alkene?

Answer 38

.... of 50

- A hydrocarbon with at least 1 double carbon-carbon bond

Question 39

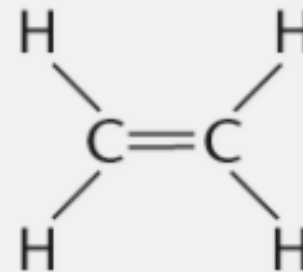
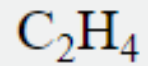
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- What is the formula and displayed formula for ethene?

Answer 39

.... of 50

Ethene



Question 40

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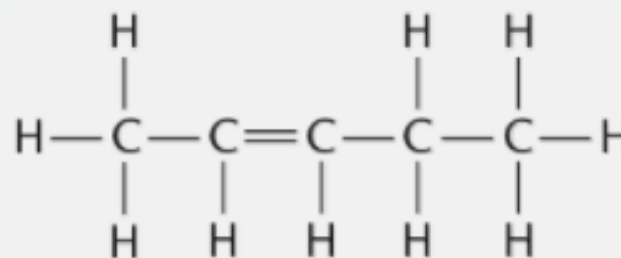
- What is the formula and displayed formula for pentene?

Answer 40

.... of 50

Pentene

C_5H_{10}



Question 41

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- Is ethene saturated or unsaturated?

Answer 41

.... of 50

- Unsaturated

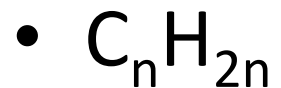
Question 42

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- What is the general formula of alkenes?

Answer 42

.... of 50



Question 43

.... of 50 **SS**

- Why do alkenes burn in air with a smoky flame?

Answer 43

.... of 50

- Incomplete combustion

Question 44

.... of 50 **SS**

- What is the functional group of an alkene?

Answer 44

.... of 50

- Carbon – carbon double bond

Question 45

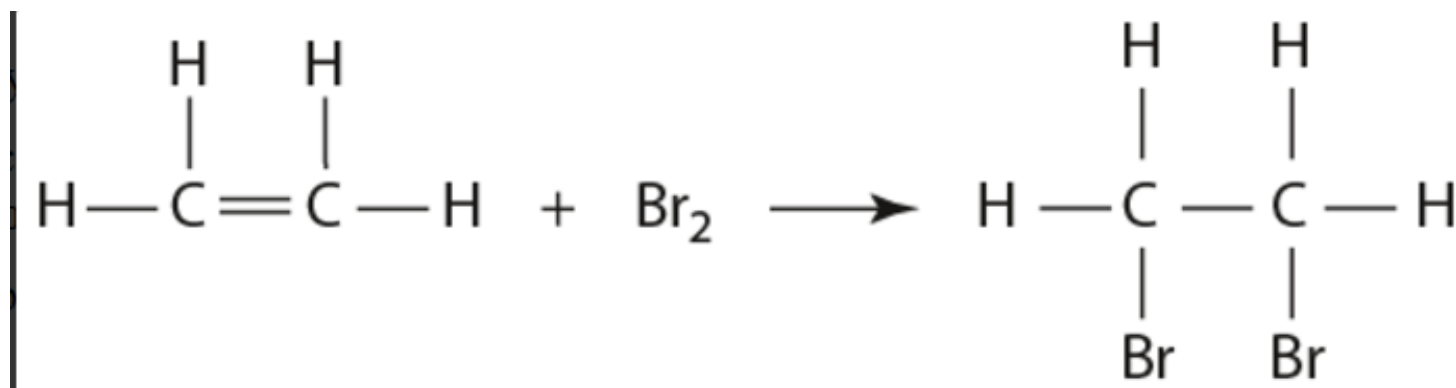
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- What is the product of the addition reaction of ethene and bromine?

Answer 45

.... of 50

- dibromoethane



Question 46

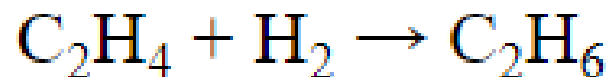
.... of 50 **SS**

- What are the conditions needed for the additional reaction of ethene and hydrogen?

Answer 46

.... of 50

- Heated catalyst of finely divided nickel
- 300°C



.....

Question 47

.... of 50 **SS**

- What are the conditions needed for the additional reaction of ethene and water?

Answer 47

.... of 50

- Hot phosphoric acid catalyst
- Steam
- Produces ethanol



Question 48

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- What is the functional group on an alcohol?

Answer 48

.... of 50

- -OH (oxygen and hydrogen)

Question 49

.... of 50 **SS**

- What is the formula and displayed formula of ethanol?

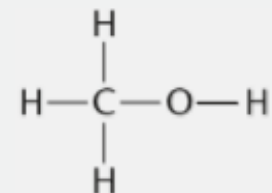
Answer 49

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• a

Methanol

CH₃OH



Question 50

.... of 50 **SS**

- What is the formula and displayed formula of butanol?

Question 51

.... of 50 **SS**

- What is the name of the process used to make alcohol?

Answer 51

.... of 50

- fermentation

Question 52

.... of 50 **SS**

- What conditions are needed for fermentation?

Answer 52

.... of 50

- Water
- Enzymes (from yeast)
- 25°C to 40°C
- Absence of oxygen

Question 53

.... of 50 **SS**

- In fermentation what is produced if oxygen is present?

Answer 53

.... of 50

- Ethanoic acid (vinegar)

Question 54

.... of 50 **SS**

- Why is an optimum temperature needed?

Answer 54

.... of 50

- If temperature is too high, enzymes will be inactive
- If temperature is too low, enzymes will become denatured

Question 55

.... of 50 **SS**

- What process is used to purify the alcohol produced by fermentation?

Answer 55

.... of 50

- Distillation

Question 56

.... of 50

- Write a word equation for the reaction of ethanol with sodium

Answer 57

.... of 50

ethanol + sodium \rightarrow sodium ethoxide + hydrogen



Question 60

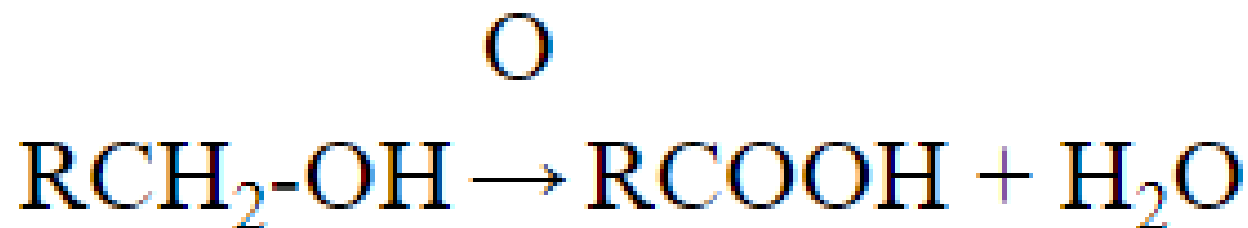
.... of 50 **SS**

- What is produced when an alcohol is oxidised?

Answer 60

.... of 50

- Carboxylic acid



Question 61

.... of 50 **SS**

- List 2 ways carboxylic acids behave which is typical of all acids

Answer 61

.... of 50

- Dissolve in water producing acidic solutions
- React with carbonates to produce carbon dioxide

Question 62

.... of 50 **SS**

- What is the functional group of carboxylic acids?

Answer 62

.... of 50

- -COOH

Question 63

.... of 50 **SS**

- What is the formula and displayed formula for butanoic acid

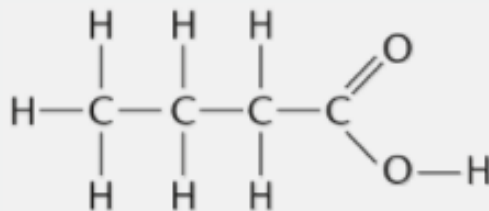
Answer 63

.... of 50

Butanoic acid

4

C_3H_7COOH



Question 64

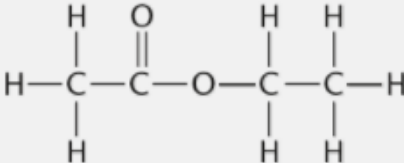
.... of 50

- How is an ester made?

Answer 64

.... of 50

- Reacting an alcohol with an acid

Alcohol	Acid	Ester	Displayed formula
ethanol	ethanoic acid	ethyl ethanoate	



Question 65

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- What is polymerisation?

Answer 65

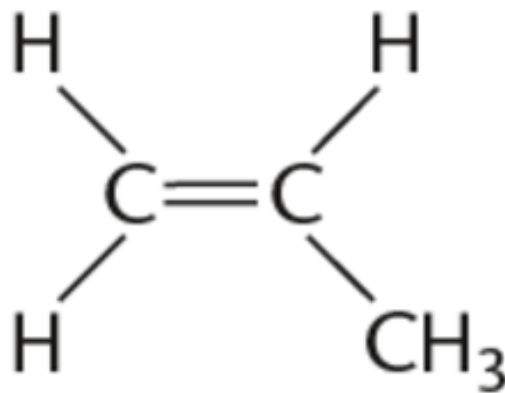
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- Joining of monomers to make a polymer

Question 66

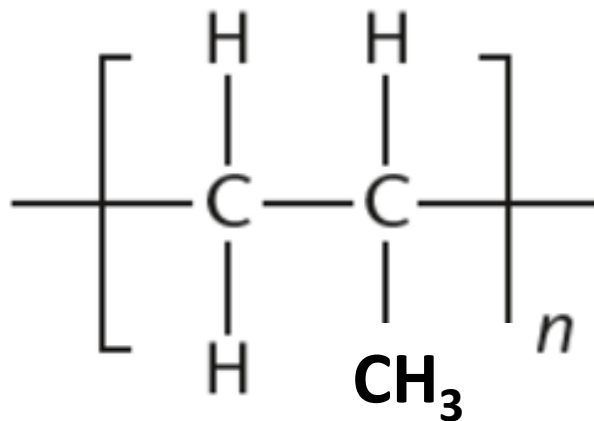
.... of 50 **SS**

- Draw the polymer for the monomer below



Answer 66

.... of 50



Question 67

.... of 50 **SS**

- What is the reaction called making a polymer using two different monomers?

Answer 67

.... of 50

- Condensation polymerisation

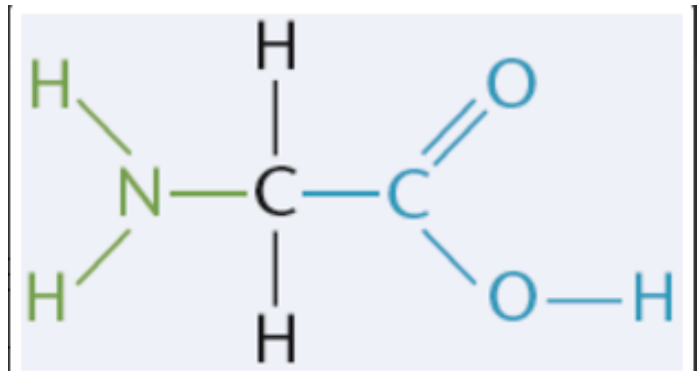
Question 68

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- What are the two functional groups of an amino acids?

Answer 68

.... of 50



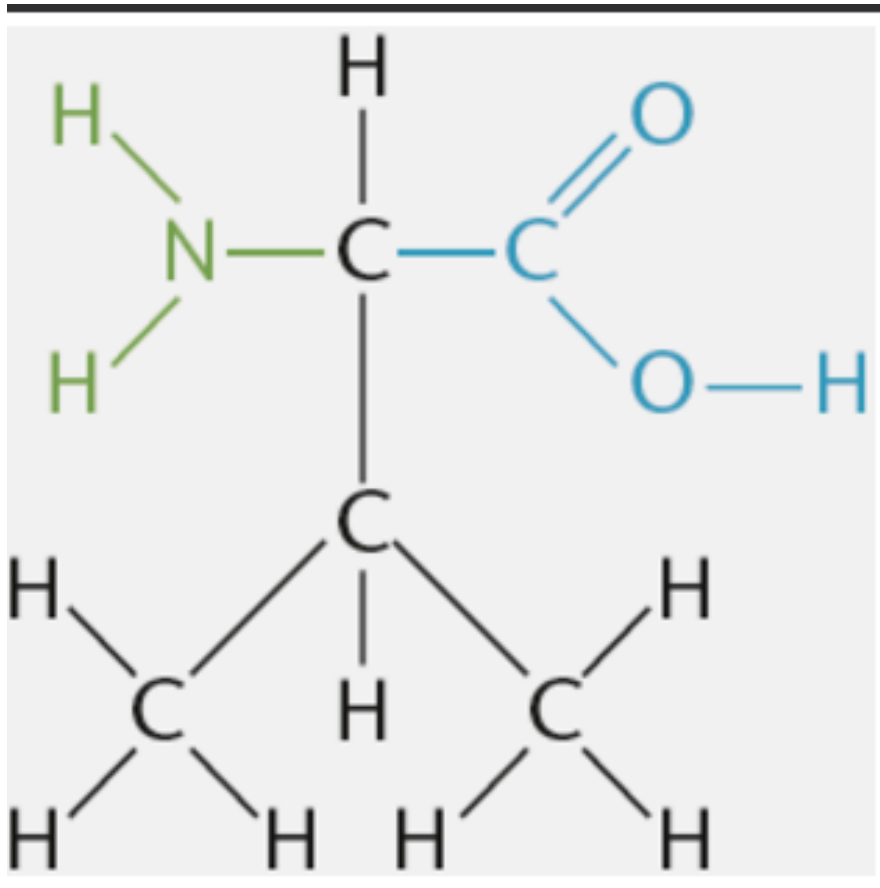
Question 69

.... of 50 **SS**

- Write the displayed formula for Valine

Answer 69

.... of 50



Question 70

.... of 50 **SS**

- What is a nucleotide made of?

Answer 70

.... of 50

- Sugar molecule
- Phosphate group
- Base