Name:
Score: 0 / 20 points (0%)

Chapter 10 Review Quiz

Multiple Choice

Identify the choice that best completes the statement or answers the question.

___ 1. Which of the following is an incorrect statement about MSDS sheets?
   a. They contain the correct IUPAC name, common names and chemical formula of the substance.
   b. They contain precautions for safe use of the substance.
   c. They can only be accessed through chemical supply companies.
   d. They contain information on first aid procedures and consequences of misuse.

ANSWER: C
MSDS sheets are available online and can also be found in schools and laboratories.
POINTS: 0 / 1
FEEDBACK:
REF: 290

___ 2. General safety precautions for use of organic chemicals in laboratory classrooms should include:
   a. using chemicals on lab benches, with lab coats and safety glasses.
   b. using chemicals in a fume hood if available, so personal protective equipment is not required.
   c. using chemicals on lab benches, with lab coats, safety glasses and gloves.
   d. using chemicals in a fume hood if available, with lab coats, safety glasses and gloves.

ANSWER: D
Fume hood is used to increase ventilation. Personal protective equipment should always be used, even with a fume hood.
POINTS: 0 / 1
FEEDBACK:
REF: 3

___ 3. Which of the following describes methods of exposure to organic chemicals?
   a. Inhalation, being in the same room as chemicals, eating and drinking after using chemicals
   b. Inhalation of chemical vapours, absorption through the skin, ingestion
   c. Eating and drinking after using chemicals, handling containers containing organic chemicals
   d. Absorption through the skin, eating and drinking after using chemicals

ANSWER: B
Eating and drinking is only hazardous if chemicals are on the skin; use of PPE should prevent this.
POINTS: 0 / 1
FEEDBACK:
REF: 293

___ 4. Correct disposal of organic chemicals involves:
   a. washing down the sink with large volumes of water.
   b. placing into plastic bags and into a rubbish bin.
   c. collection into a waste container for professional disposal.

d. collection into a waste container for lab staff or teachers to wash down the sink.

ANSWER: C
Organic compounds should never be put down the sink or in the bin. Always use a waste container.
POINTS: 0 / 1
FEEDBACK:
REF: 294

5. Propene is reacted with hydrogen in a hydrogenation reaction. Which of the following identifies the product and reaction conditions required?
   a. Product: propane Reaction conditions: metal catalyst, heat and pressure
   b. Product: ethane and methane Reaction conditions: metal catalyst, heat and pressure
   c. Product: ethane and methane Reaction conditions: metal catalyst
   d. Product: propane Reaction conditions: metal catalyst

ANSWER: D
Alkenes form alkanes in a hydrogenation reaction. Only a metal catalyst is required.
POINTS: 0 / 1
FEEDBACK:
REF: 296

6. Which of the following equations shows a balanced equation for the complete combustion of hexane?
   a. $C_6H_{12}(l) + 9O_2(g) \rightarrow 6CO_2(g) + 6H_2O(l)$
   b. $C_6H_{12}(l) + 6O_2(g) \rightarrow 6CO(g) + 6H_2O(l)$
   c. $2C_6H_{14}(l) + 19O_2(g) \rightarrow 12CO_2(g) + 14H_2O(l)$
   d. $C_6H_{14}(l) + 19O_2(g) \rightarrow 6CO_2(g) + 7H_2O(l)$

ANSWER: C
A balanced equation has equal numbers of particular atoms on both sides of the arrow.
POINTS: 0 / 1
FEEDBACK:
REF: 300

7. The process of producing margarine from edible liquid oils is called:
   a. hydrogenation and results in double bonds being broken to form a more unsaturated molecule.
   b. hydrogenation and requires a nickel catalyst and heat.
   c. hydration and requires a nickel catalyst and heat.
   d. hydration and results in double bonds being broken to form a more saturated molecule.

ANSWER: B
Addition of hydrogen is hydrogenation. A nickel catalyst and heat are required conditions.
POINTS: 0 / 1
FEEDBACK:
REF: 296

8. When bromine is added to 1-butene, the product is:
   a. 1,2-dibromobutane.
   b. 1,2-dibromobutene.
   c. 1-bromobutane.
   d. 2-bromobutane.

ANSWER: A
Addition of halogens to alkenes results in both halogen atoms being added across the double bond.
POINTS: 0 / 1
FEEDBACK:
REF: 297

___ 9. When water is added to ethene:
a. ethanol forms in the presence of a metal catalyst.
b. ethane and hydroxide ions form as products in the presence of a dilute sulfuric acid catalyst.
c. ethanol forms in the presence of a dilute sulfuric acid catalyst.
d. ethanol forms, no catalyst is required due to the reactivity of the double bond.

ANSWER: C
Hydration of alkenes results in production of alcohols. Dilute sulfuric acid is used as a catalyst.
POINTS: 0 / 1
FEEDBACK:
REF: 297

___ 10. When HCl is added to ethyne, the product formed is:
a. 1,2-dichloroethane.
b. chloroethane.
c. chloroethene.
d. 1,2-dichloroethene.

ANSWER: C
Addition of a hydrogen halide to an alkyne results in production of a halogenated alkene.
POINTS: 0 / 1
FEEDBACK:
REF: 297

___ 11. Markovnikoff's rule says that when HBr is added to propene, the product will be:
a. propane because multiple HBr molecules will result in 2 hydrogen atoms adding to the propene molecule.
b. 1,2-bromopropane because multiple HBr molecules will result in 2 bromine atoms adding to the propene molecule.
c. 1-bromopropane because the bromine adds to the end carbon as it has a greater number of hydrogens on it.
d. 2-bromopropane because the hydrogen adds to the end carbon as it has a greater number of hydrogens on it.

ANSWER: D
Markovnikoff’s rule adds the hydrogen to the carbon atom with the most hydrogens already attached to it.
POINTS: 0 / 1
FEEDBACK:
REF: 297

___ 12. When methane is reacted with bromine, which of the following will occur?
a. A series of four reactions eventually results in the formation of tetrabromomethane.
b. Tetrabromomethane forms immediately if UV light is present.
c. A series of four reactions eventually results in the formation of tetrabromomethane if UV light is present.
d. Tetrabromomethane forms immediately without the need for UV light.

ANSWER: C

Substitution of halogen atoms onto alkanes requires UV light, and occurs one atom at a time. To fully halogenate the methane will require four individual steps.

POINTS: 0 / 1
FEEDBACK:
REF: 300

___ 13. Incomplete combustion:
a. results in the production of more moles of carbon dioxide per mole of fuel combusted.
b. results in less energy produced per mole of fuel combusted.
c. results in more energy produced per mole of fuel combusted.
d. results in the production of the harmless gas carbon monoxide.

ANSWER: B
Incomplete combustion produces less energy per mole than complete combustion.
POINTS: 0 / 1
FEEDBACK:
REF: 300

___ 14. Crude oil is separated into its components in a process called:
a. fractional distillation.
b. catalytic cracking.
c. thermal cracking.
d. functional distillation.

ANSWER: A
Fractional distillation occurs in a fractionating tower and splits crude oil into fractions based on boiling point.
POINTS: 0 / 1
FEEDBACK:
REF: 304

___ 15. The purpose of catalytic cracking is to:
a. split crude oil into the different components.
b. break down large hydrocarbon molecules into smaller hydrocarbon molecules.
c. add smaller hydrocarbon molecules to form larger hydrocarbon molecules.
d. convert small hydrocarbon alkanes into alkenes.

ANSWER: B
Catalytic cracking is breaking down long chain hydrocarbons into more useful, smaller molecules.
POINTS: 0 / 1
FEEDBACK:
REF: 304

___ 16. Which of the following is not a possible consequence of the mining, transport and use of crude oil?
a. the enhanced greenhouse effect
b. oil spills from transport tankers
c. damage to the ozone layer
d. environmental damage from mining operations

ANSWER: C
Destruction of the ozone layer is due to release of halogenated compounds called CFCs.
POINTS: 0 / 1
FEEDBACK:
REF: 305

REF: 305

___ 17. The enhanced greenhouse effect:
a. has resulted in lower overall average temperatures across the planet.
b. is a natural part of the Earth's temperature regulation system.
c. results in more heat energy being trapped in the Earth's atmosphere.
d. is caused by increased heat energy from the Sun being let into the Earth's atmosphere.

ANSWER: C
The enhanced greenhouse effect sees more heat trapped in the atmosphere due to increased greenhouse gases being produced.
POINTS: 0 / 1
FEEDBACK:
REF: 306

___ 18. Which of the following is not a consequence of the enhanced greenhouse effect?
a. ocean acidification and loss of coral reefs
b. higher average yearly temperatures
c. shrinkage of permanent ice and resulting increase in sea levels
d. more ice forming in the Arctic due to extreme winter weather events

ANSWER: D
While there are more extreme winter weather events occurring, Arctic ice is decreasing not increasing.
POINTS: 0 / 1
FEEDBACK:
REF: 306

___ 19. Which of the following is in use to try and reduce carbon dioxide emissions?
a. collection and storage of all gases from power stations
b. storage of carbon dioxide underground in a process called sequestration
c. incomplete combustion of coal in power stations
d. development of synthetic coal that releases less carbon dioxide per kilogram of coal combusted

ANSWER: B
Carbon sequestration is the chemical absorption of carbon dioxide from exhaust gases for underground storage.
POINTS: 0 / 1
FEEDBACK:
REF: 308

___ 20. Polymer pollution:
a. is not an issue as most polymers are biodegradable.
b. is not an issue as most polymers break down within a few years.
c. is an issue as we do not recycle any form of polymer.
d. is an issue as we do not recycle all forms of polymers.

ANSWER: D
While we recycle several types of polymer, not all are recycled and end up in landfill.
POINTS: 0 / 1
FEEDBACK:
REF: 309

Retake