Additional Info (Part 2)-Ch 12 &13 Test Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

18.A- Name the following, including their geometrical isomerism (meaning cis or trans):



B- How many geometric stereoisomers are possible if there are 2 double bonds in the molecule? \_\_\_\_\_\_\_\_\_\_\_ 3 db?\_\_\_\_\_\_\_\_\_\_\_ (See exp 12.4 in your book. Know the formula!)

19. Which is more oxidized, saturated or unsaturated hydrocarbons?

20. Distinguish between nucleophile and electrophile.

21. A) What is the trend regarding alkenes and boiling point?

22. Are hydrocarbons soluble in water? \_\_\_\_\_\_\_ Why or why not?

 Are they soluble in alkanes? \_\_\_\_\_\_\_\_\_\_ Why or why not?

23. Show the hydrohalogenation mechanism of HI with 3-isopropyl-2-pentene. Name the product and identify the nucleophile, electrophile and carbocation. \*Watch your curved arrows…make sure they are in the right direction.

24.A- Is: C-C-C-OH a primary, secondary or tert alcohol?

 B- Draw any examples of the other 2

25.A- What kind of reaction(s) do(es) benzene undergo?

 B-Show an example.

26.A) What is a “chain-growth” polymer? (Ch 12.7)

 B) What must happen for ethylene (ethene) to polymerize to polyethylene (regarding the double bond)?

27. What does ethylene do in plants?

28. Distinguish between a saturated and an unsaturated triglyceride. (\*know properties of each)

29. Is there cis-trans geometrical isomerization in:

 A. linear alkanes?

 B. cyclic alkanes?

 C. alkenes?

 D. alkynes?

 E. aromatics? (meaning benzene)

30. Which has the greatest molecular mass?

 Propane, propene or propyne

31. Given: Any 2 alkene constitutional isomers. Which has a higher boiling point, the more linear alkene or the branched alkene?

32. Be able to recognize an isoprene unit in a terpene. Draw one below.

33. Show the both the major and minor products when 1-methylcyclopentene is hydrated (using H2SO4 catalyst). \*Overall reactions…not the mechanism

In the major product, does it form a primary, secondary or tertiary alcohol?

34. Given:

 

 What is the final product?

35. 3-methyl-2-hexene is halogenated with chlorine. Draw and name the product.

36. Given the product: 2,3-dichloropentane, show the reactants.

37. Given the product: 2-bromo-2-methylhexane, show the reactants.

38. Define aromatic.

 Draw a structure that all aromatics must contain.

 Give the molecular formula for the above structure.

 Benzene is put in a test tube and HCl is added. What is the product?

39. Draw: Phenol

 Give a property of substances that contain phenol.

40. Draw 4-phenyl-2-octene

41. Draw methylbenzene.

What common name is the above structure called?

42. Draw aniline. What functional group does it contain?

43. Draw: o-diethylbenzene. Next, draw the structure in the para position.

44. Draw m-nitrobenzene.

45. Give an example of an everyday product that contains polypropylene.

46. What’s the difference in polyunsaturated vs monounsaturated? Which is more fluid at room temp?

47. Draw: 3-methyl-4-octen-2-yne.

48. What is the functional group in an aldehyde?\_\_\_\_\_\_\_\_\_\_\_\_\_ Ketone? \_\_\_\_\_\_\_\_\_\_\_\_ Carboxylic acid? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Alcohol? \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Amine? \_\_\_\_\_\_\_\_\_\_\_

\*\*Go over functional groups and families!

49- Read Chem Connections 12C (p. 361). What must happen to rhodopsin before a neuron (nerve) can transmit an impulse (‘fires’)?

50- Along with the PPT, refer to Chem Connection 18A (p. 481) and answer these questions:

1. Which has more saturated fats, animals or plants?
2. How does industry cause an oil become more saturated (process)?
3. What does partial hydrogenation achieve?
4. What is a ‘consequence’ of industry using the (reversible) Ni catalyst (meaning, what gets formed)?
5. Do naturally occurring unsaturated triglycerides contain cis or trans isomers?
6. A diet high in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ increases the risk of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ disease.

Next, look at the reaction on p. 549 under section B.

1-What type of reaction is shown (it’s one of the types you must know for this test)?

2- Which is more hydrogenated, margarine or ‘shortening’? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3- Therefore, which is more saturated? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4- (Finally!), which is more reduced? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

LASTLY…I think y’all already know what the extra credit will be. Study hard (but, get a good night’s sleep) and GOOD LUCK! 😊