

Biological Sciences 103 Text Study Notes

Chapter 17

1. What is the definition of an essential oil? Why are they "secondary plant products?" What role might they have in a plant's life? Do they have a role in a human's life?
2. What is aromatherapy? What would Vick's VaporRub have to do with it?
3. Which 2 ancient (before C.E. period) civilizations gave us records of the use of spices? From where did many of these spices come from?
4. What was the relationship between the Romans and spices and the spice trade?
5. What did Marco Polo have to do with spices?
6. Which European country was the first to start exploring the world by sea? What did they accomplish?
7. What does the section: "Imperialism" describe? What are the spices brought from the New World to Europe?
8. Is cinnamon from New or Old World? From what plant part does it come from? Where is it native?
9. What is so special about black pepper usage? What is the difference between black and white pepper? Where is pepper native?
10. A clove is what plant part? Where is it native?
11. What is unusual about nutmeg and mace? Where are they native? Why would some people use them at a "wild" party?
12. From what plant part does ginger come? Is it from the Old or New World? How are ginger and turmeric related? What color is turmeric? How are turmeric and curcumin related? What might curcumin do for your health?
13. Why is saffron the world's most expensive spice? From what plant part does it come? Where is it native? What color is it?
14. In what family are capsicum peppers? What is capsaicin? How is it related to Scoville Heat Units? What are 2 uses for it? What vitamin do peppers contain?
15. In what family is vanilla placed? Where is it native? What plant part does vanilla come from? How is it processed? Which country is the world's leader in production?
16. What genetically engineered microorganism produces a substitute for natural vanilla?
17. What plant part yields allspice? What country controls world production of it?
18. What is the center of origin for many members of the mint family? The Latin verb *lavare* gave rise to what English word for an herb? This herb's essential oil might be responsible for what kind of enhancement if used a lot?
19. Early Greeks used what herb to make a crown for a champion athlete? Intact horseradish roots don't provide the characteristic pungency associated with horseradish - why not?
20. What chemical element is involved in the compounds responsible for onion and garlic odors and flavors? Of what possible medical benefit are they?
21. What is the difference between (natural) direct, vat and mordant dyes? Give an example of each. What color is the rarest of all the natural plant dyes?

Chapter 18

1. What 2 qualities do the most valuable plant fibers have? What chemical makes plant fibers brown and weak?
2. What are the 3 classes of plant fibers (based on where they are found)?
3. What is the difference between ginning, retting and decortication? Where and when was the first spinning wheel invented?
4. What is the history of cotton fiber usage? What is the genus and species names of the predominant type of cotton grown in the world today?
5. What is the connection between cotton and slavery in the U.S.?
6. What is Mercerization? What is its benefit? What is Bt cotton?
7. What plant part yields linen fibers? How are they processed?
8. What 3 other bast fibers have been commercially used?
9. What 3 leaf fibers have been commercially used?
10. What fiber was once used for "life preservers"?
11. Your doormat could be made of what fiber? From what plant part might it be derived?
12. Rayon is made from what chemical?
13. What is bark cloth?
14. Trees are cut down for lumber, but in the tropics most forests are cleared for _____ & _____.
15. If one mature mahogany tree is cut down it should be replaced by a seedling, however, there is a problem with this scenario - what?
16. What is the difference between hardwoods and softwoods? What is the name of the hardest, densest wood?
17. What is cambium? What does it do? What is the difference between heartwood and sapwood? What is veneer? What is the greatest use for softwood lumber?
18. What is charcoal? Why is it desirable?
19. What resin is used for water-proofing? For what might rosin be used? What is the difference between resin and rosin?
20. What plant part yields cork? What 4 qualities of cork make it very useful?
21. What is wood pulp? What is its major use? How does wood pulp manufacture lead to pollution? What is lignin?
22. What is the difference between paper and parchment? Who invented paper-making?
23. What alternatives are there to using wood pulp?
24. Bamboo is in what plant family? What uses does it have?

Chapter 19

1. In the ancient Old World, which 3 countries had a wealth of medical plant information?
2. Who is considered the "Father of Medicine?"
3. Who was the physician who traveled with the Roman army? Why was his work important?
4. What is an herbal? What is the Doctrine of Signatures? What is the scientific basis for it?
5. What do Witch Hazel, Echinacea and Bloodroot have in common?
6. Which is the leading country for incorporating traditional herbal medicine into a modern health care system?
7. Why are tropical rain forests of special concern with regard to medicinal plants?
8. What is a secondary plant product? Alkaloids are prevalent in 3 plant families: what are their common names? On what human system are they pronounced in action?
9. Chemically, what is a glycoside? What is the common name of the plant which is the source of a remedy for heart patients? What is "dropsy?"
10. What is the genus name of the plant which is the source of a chemical used to treat fever, pain and chills? What is the name of this chemical? What is its common name? It appears that plants can use this chemical too, how?
11. How is malaria transmitted? What is the causative agent (just a general group name - not a genus name)? What kind of cells in a human are affected?
12. What is "Jesuits' bark?" Why was that name used? What is the name of the most effective alkaloid in the bark? What is the "tonic" in a gin and tonic drink?
13. What is the common name of the plant from which reserpine is derived? The sap from what plant can be used to treat a burn or cut?
14. A gymnosperm called: (genus name)_____ is the source of an alkaloid useful as a decongestant. What else, that is illegal, can this or a very similar alkaloid, be used to produce?
15. For what medical problem can alkaloids from Vinca be used? How do they act on cells? The bark from the Pacific yew tree is the source of a chemical used to treat what medical problem?
16. What might St. John's wort be used for in humans? Does it "work?" What might Ginkgo be used for in humans? Does it "work?" What plant part is used? What might Saw Palmetto be used for in humans? What plant part is used?