Puu 21.4000 15.12.2006, AnV

Give short answers you can use English Finnish or Swedish.

1. Give three wood species that are easy to defiberize mechanically.

2. What kind of raw material would you choose to produce mechanical pulp for newsprint ? Which raw material would you choose for for pulps used in mechanical fine paper ?

3. What are the two problems that should be solved in order to use Scots pine (Pinus Silvestris) for mechanical pulping?

4. What happens to wood in a cyclic stress field? What is the difference between elastic and plastic deformation?

5. GW process uses much less energy than TMP process. What makes TMP process competitive, mention two reasons.

6. What are the 3 main process parameters in wood grinding? Describe briefly their impact on the efficiency of the process (specific energy consumption) as well as on pulp quality.

7. Mention main TMP refiner types.

8. Give a rough value for the specific energy levels required per ton PGW for LWC and per ton TMP for LWC.

9. Two main types of screen baskets are used in pressure screens. Give examples of positions where hole screen baskets are used.

10. TMP contains much lower amount of shives than GW pulp. Explain why TMP pulp needs to be screened

11. Latency removal changes fiber properties. Give the most important effect and explain why it occurs.

12. Draw schematic examples of the fiber length distributions for GW, PGW and TMP

13. Which fiber properties affect the dewatering behavior of the pulp slurry? How can dewatering behavior be measured?

14. What benefit mechanical pulp gives for printing papers ~~that is given by~~ compared to hard wood kraft? Name two paper properties.

15. Describe factors affecting pulp initial brightness. Why unbleached groundwood is typically brighter than TMP.