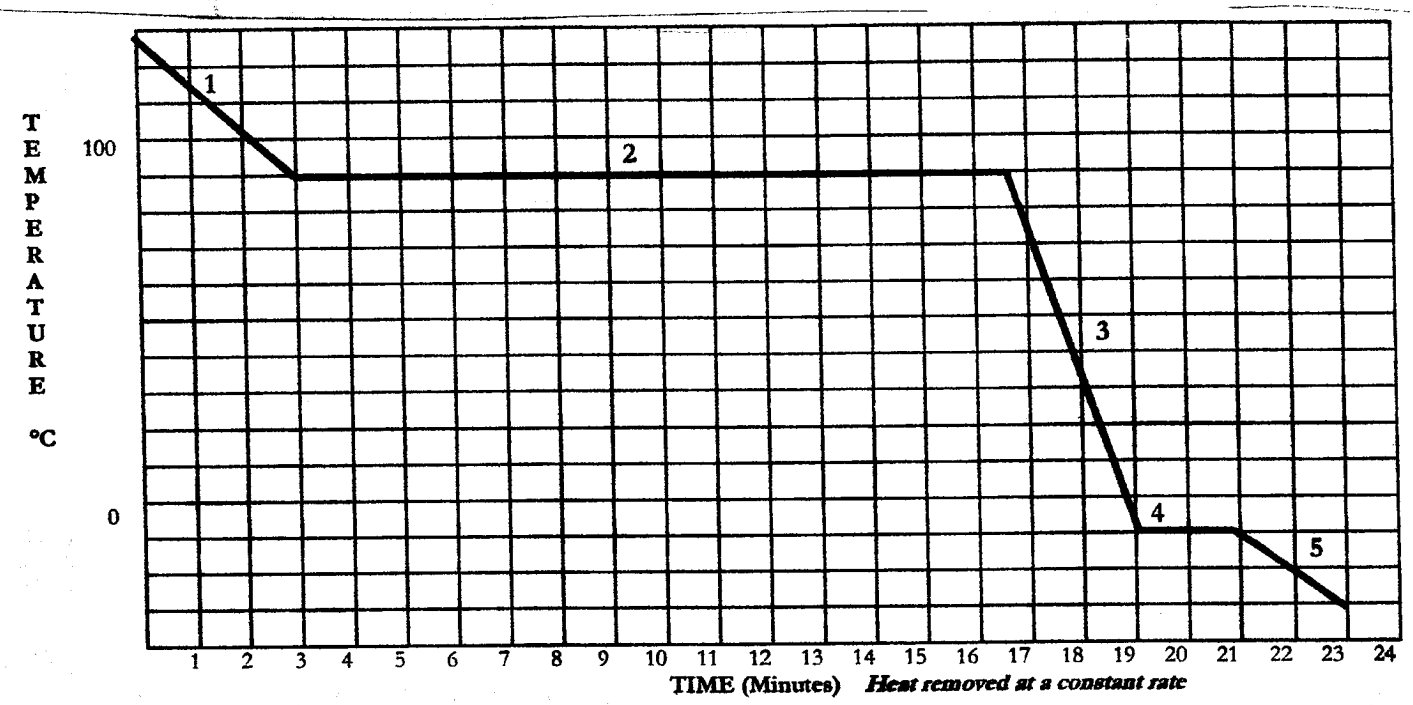
B. The following is a ***cooling curve*** showing the ***release*** of heat at a constant rate of 500.0 joules/minute from a 3.00 gram sample of water vapor at 140.0°C. The final temperature of the ice is –20.0°C.



Questions

1. During which segments is kinetic energy decreasing? _____
2. During which segments does kinetic energy remain the same? _____
3. During which segments is potential energy decreasing? _____
4. During which segments does potential energy remain the same? _____
5. During which segments is one phase only present? _____
6. During which segments are two phases present? _____
7. At what time does the liquid phase first appear? _____
8. At what time does the solid phase first appear? _____
9. At what time do the particles have the highest average kinetic energy? _____
10. Phase changes that occur with a release of energy are _____.
11. _____ and _____ are exothermic phase changes.
12. During which segment could the heat of solidification be determined? _____
13. During which segment could the heat of condensation be determined? _____
14. How long does it take to completely freeze the sample at its freezing point? _____
15. How long does it take to completely condense the sample at its condensation point? _____
16. During which segment is the substance entirely in the solid state? _____
17. During which segment is the substance entirely in the liquid state? _____
18. During which segment is the substance entirely in the gas state? _____