Name: _____ Group: _____ Date: _____

CONCEPT REVIEW 50

Wood, modified wood, ceramics, metals and alloys

EST

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Complete this concept review handout and keep it as a record of what you have learned.

Definitions

- Wood is *a material obtained by harvesting and processing trees.*
- Modified wood is *treated wood or a material made from wood mixed with other substances.*
- A ceramic is *a solid material obtained by heating inorganic matter containing various compounds, usually oxides.*
- A metal is *a material extracted from a mineral ore. Metals are usually shiny in appearance and are good conductors of electricity and heat.*
- An alloy is *a mixture of a metal with one or more other substances, which may be metallic or nonmetallic.*
- Steel heat treatments are *methods of enhancing certain mechanical properties of steel through periods of heating.*

Wood and modified wood

Properties

- *Hardness*
- *Elasticity*
- *Resilience*
- *Toughness*
- *Low thermal and electrical conductivity*
- *Ease with which it can be shaped and assembled*
- *Colours and shades*
- *Lightness*

Degradation and protection

Examples of causes of degradation:

Many fungi, microorganisms and insects can infest the wood, feed off it and cause it to rot.

Examples of means of protection:

It can be varnished, painted or treated with protective coatings. It can be treated by dipping it in an alkaline solution containing copper or by heating it to a high temperature.

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Ceramics

Properties

- *Low electrical conductivity*
- *Low thermal conductivity*
- *High degree of hardness*
- *Corrosion resistance*
- *Heat resistance*
- *Resilience*

Degradation and protection

Examples of causes of degradation:

The action of certain acids and bases

Thermal shocks

Examples of means of protection:

Exposure to acids, bases or thermal shocks should be avoided.

Metals and alloys

Properties

- *Good thermal and electrical conductivity*
- *Malleability*
- *Ductility*

Degradation and protection

Examples of causes of degradation:

Oxidation causing corrosion

Examples of means of protection:

Coatings

Heat treatments: quench hardening and tempering, annealing