

M507 – Health effects of hazardous substances – Revision questions

Section 2 – Introduction to toxicology

1. Why is it often very difficult to link the cause and effect of a disease?
(Page 4)
 - Effect may not occur at time of exposure (may be days or years later)
 - Person may not work with substance by time effect occurs
 - Wide variation in genetic susceptibility
 - Wide variation due to age, health status, gender
 - Possible combined effects from exposure to other substances
 - Effects of tobacco, alcohol, drugs etc
 - Lack of detailed toxicological information on many substances

2. What do you understand by the terms ‘acute’ and ‘chronic’ effects? Give examples
(Page 5)
 - Acute effects occur during or immediately after exposure, tend to be of short duration, generally reversible, generally in response to relatively high exposures. (Examples see manual)
 - Chronic effects tend to occur after long-term repeated exposure to lower levels, generally irreversible. (Examples see manual)

3. What do you understand by the terms ‘local’ and ‘systemic’ effects? Give examples
(Pages 5 and 6)
 - Local effects occur at the direct point of contact with the substance. (Examples see manual)
 - Systemic effects occur when the substance is absorbed into the body’s systems and affects organs remote from the point of contact. (Examples see manual)

4. What do you understand by the terms ‘additive’ and ‘synergistic’ and ‘independent’ effects? Give examples
(Pages 7 and 8)
 - Additive effects – combined effects of two substances are equal to the sum of the individual effects if the substances were encountered alone. (Examples see manual)
 - Synergistic effects – combined effects of two substances is much greater than the sum of the individual effects if the substances were encountered alone. (Examples see manual)
 - Independent effects – the toxic effects of each substance are unaffected by simultaneous exposure. (Examples see manual)