



# NEBOSH Certificate NGC2/6

## Chemical and biological health hazards and control

### Revision questions

**Q1 Explain and give examples of the four types of occupational health hazard as categorised by the syllabus:**

- *physical*
- *chemical*
- *biological*
- *ergonomic*

**Q2 Define 'acute' and 'chronic' and give some examples for chemical and biological agents.**

**Q3 Define 'local', 'target organ' and 'systemic'.**

Although experience shows that NEBOSH rarely ask a 'parts of the body' question, you should be able to provide a brief outline of the organs of the body which we mentioned in the text - respiratory system, skin, kidney, liver, circulatory system, brain / CNS.

**Q4 Define, with examples if possible, the terms which are listed in the syllabus: toxic, harmful, corrosive, irritant, asphyxiant, narcotic, carcinogenic, teratogenic/mutagenic.**

**Q5 Describe, with examples, the main routes of entry into the body for substances (obviously it is toxic substances with which we are particularly concerned).**

**Q6 What is the significance of the 'particle' size of airborne contaminants, pollutants and microbiological agents?**

**Q7 Define the terms listed in the syllabus which encompass airborne liquids and particles: gas/vapour, mist, smoke, fume, dust; which of these would fall into the category of 'aerosol'?**

**Q8 There are three common ways of expressing the airborne concentration of a substance - explain.**

**Q9 What would you say is the difference between air sampling and air monitoring?**

**Q10 Explain the legal requirements regarding workplace exposure limits WELs. What is the legal significance of the fact that some substances have, in addition to their WEL, associated risk phrases or are otherwise specifically mentioned in the CHIP and COSHH Regs or certain HSE publications? Briefly summarise the main categories into which these 'more-than-a-WEL-substances' fall.**

Some of the following questions are taken from the study material - we have repeated them because they are particularly important; accordingly, if you neglected to attempt them before ...

**Q11 Hardwood dust has a long-term WEL of  $5 \text{ mg m}^{-3}$ . A worker is exposed to hardwood dust at a concentration averaged over a day of  $4 \text{ mg m}^{-3}$ . Is this acceptable?**

**Q12 An operator is exposed to a general dust at a concentration of  $6 \text{ mg m}^{-3}$  averaged over the day. This dust has a long-term WEL of  $5 \text{ mg m}^{-3}$ . Is this acceptable?**

**Q13 What provision is there in EH 40 to deal with exposure levels which 'peak' from time to time in the day?**





**Q14** *In the investigation of the level of a workplace contaminant, it may not be necessary to analyse the contaminant - why not?*

**Q15** *Give examples of situations in which the nature of the airborne contaminant may be completely unknown.*

**Q16** *In addition to the nature of the contaminant (ie what is in the air?), what other factors might be investigated by air monitoring? (You should be able to add three or four factors.)*

**Q17** *A list of the most common reasons for undertaking air monitoring would probably start with:*

- *to estimate exposure of personnel to contaminants*

*add another three or four reasons for undertaking air monitoring.*

**Q18** *Briefly list a few key points to outline the similarities and differences between personal monitoring and area monitoring.*

**Q19** *Why do you think that it is necessary to have exposure limits for general workplace dust?*

**Q20** *Outline the operation and use of a colour detector tube (chemical indicator tube) for measuring the concentration of a gas or vapour in the air.*

Finally, in these questions on air sampling/monitoring and occupational exposure limits, make sure that you have attempted the question in section 12.4 of our NGC2/6 study material (at the end of book 1) - this really encompasses the main concerns of the first part of this syllabus element.

**Q21** *Some people say the heart of COSHH is regulation 6, assessment, some say regulation 7, control. The writer of the present material is aware that he has said both in the past! If I was forced to choose, I suppose I would plump for regulation 6 if only because, logically, you must identify and assess the risks before deciding on the appropriate control(s) to be adopted. Fill in the gaps in this extract from COSHH regulation 7:*

Every employer shall ensure that the ..... to substances ..... to ..... is either ..... or, where this is not reasonably ....., adequately .....

*COSHH regulation 7*

**Q22** *Outline the hierarchy of control for substances, with examples.*

**Q23** *Outline the limitations of personal protective equipment with regard to hazardous substances.*

**Q24** *Administrative issues can be seen as applying through the hierarchy of control; give some examples of what we might call 'administrative control'.*

**Q25** *Ventilation is one form of (engineering) control. Explain the difference between general dilution ventilation and local exhaust ventilation. Draw a simplified figure showing the main components of a local exhaust system.*

**Q26** *What sort of information might be shown on a safety data sheet? If you like make up a data sheet for an imaginary substance of your choosing.*





**Q27** *Health surveillance is particularly important for what class of hazardous substances?*

The four questions below encompass most of what you need to know for the purposes of your NEBOSH Certificate concerning transport and related issues.

**Q28** *Outline the main precautions to be taken to ensure the safe transport of hazardous substances by road.*

**Q29** *Describe in outline the type of information that you would see displayed on a road tanker being used to transport a hazardous chemical.*

**Q30** *Outline the requirements of The Chemical (Hazard Information for Packaging and Supply) Regulations.*

**Q31** *Explain the function of a safety data sheet for a particular chemical.*

Finally, some more biological agents questions.

**Q32** *Outline some environments in which workers might come into contact with biological hazards.*

**Q33** *Briefly describe the three main routes of entry for biological agents.*

**Q34** *List 10 or so methods of control that could be used in the control of the various microbiological agents - for example, the control that would be required when health surveillance shows that an individual is becoming sensitised to a particular allergen is immediate change of work away from risk of exposure; now add to this first example.*

