

Updated Oct 2007, supersedes June 2002

## **MCERTS Personnel Competency Examinations Sample Questions**

The examinations for Personnel competency are as follows;

Level 1	Multichoice paper Narrative paper
Level 2	Oral interview
Technical endorsements	Multichoice paper Narrative paper

Each paper will be of 50 minutes duration. The following pages have a selection of questions for Level, TE1 and TE4 multichoice papers. The narrative papers will be based on calculations and specific activities for the relevant topic, no examples are available at this stage.

The endorsements will be based on the current CEN standards, where applicable, i.e. TE1 particulate to BSEN13284 part 1.

## **Level 1 Emission Monitoring Examination Sample Questions for Multiple Choice Examination**

1. What is the normal temperature standardisation used for correction of emissions?
  - A 273K
  - B 273 C
  - C O K
  - D 20 C
  
2. A stack with a positive rather than negative pressure would ;
  - A Have a higher risk potential
  - B A lower risk potential
  - C It would not affect risk
  - D None of the above
  
3. What would be the most important location for use of intrinsically safe instrumentation?
  - A At a site using flammable solvents
  - B A power station
  - C A waste incineration plant
  - D A site where the instrument is likely to be exposed to the weather
  
4. Which of the following statements is true?
  - A Pitot tubes must be stored vertically
  - B Pitot tube nozzles must be calibrated by measurement
  - C Pitot tube factors may be different for different tubes
  - D Pitot tubes do not require calibration
  
5. A dry gas meter should be used only when
  - A The meter is not exposed to the elements
  - B When moisture has been removed from the gas stream
  - C The volume to be measured is greater than 1m<sup>3</sup>
  - D None of the above situations.
  
6. A zirconia probe measures 7.5% oxygen in a wet flue gas containing 15% moisture. What is the dry gas oxygen content:
  - A 8.63%
  - B 6.38%
  - C 8.82%
  - D 6.0%
  
7. When monitoring a batch process, the emissions are likely to be
  - A Highest at the beginning of the process
  - B Lowest at the beginning of the process
  - C Highest in the middle
  - D Not necessarily any one of the above

8. COSHH regulations would require:
- A a risk assessment associated just with exposure to chemicals used while sampling
  - B a risk assessment associated with both potential exposure to flue gas and to chemicals used while sampling
  - C a risk assessment relating to fire and explosion hazards while sampling
  - D assessment of risks relating to high pressure gases
9. A UKAS schedule details:
- A When a measurement may be undertaken
  - B Species accredited
  - C The time taken to measure a particular species
  - D None of the above
10. A bag filter is unlikely to be used as a particulate control system in a process which involves:
- A very fine particles
  - B wet gases
  - C gases above 100°C
  - D very high particulate concentrations
11. Analysis of liquid extracts of particulate matter for the determination of metals could be undertaken by:
- A atomic emission spectroscopy
  - B uv/visible spectroscopy
  - C ion chromatography
  - D x ray diffraction
12. Traceability normally means:
- A the ability to track all items of a company's equipment at any instant in time
  - B the ability to trace backwards, step by step, from the final numerical answer to the individual component measurements
  - C the ability to relate the calibration of a gas or a piece of equipment back to national or international standards through an unbroken chain of comparisons
  - D the ability to find the equipment used in a specific sampling exercise

## **Technical Endorsement 1 – Particulate Monitoring Sample Questions for Multiple Choice Examination**

1. In a wet stack what would be the preferred method of sampling particulates at 150 degrees C
  - A In stack filtration non isokinetic
  - B In stack filtration –Isokinetic
  - C Out of stack filtration –Isokinetic
  - D In stack filtration-non isokinetic
  
2. Particulates deposited in the probe and nozzle during sampling are more likely to be
  - A Small particulates
  - B Large particulates
  - C Could be small or large
  - D Are more likely to be inert particulates
  
3. Particulate sizes at sites with bag filters would tend to have
  - A Smaller particulates
  - B Larger particulates
  - C A mixture of small and large
  - D More coloured particulates

## **Technical Endorsement 4 – Gaseous Monitoring Sample Questions for Multiple Choice Examination**

1. When extracting sampling gases what would be the normal temperature of a heated line?
  - A 180 C
  - B 140C
  - C 105 C
  - D 120 C
  
2. Using IR, which of the following are most likely to interfere with each other
  - A CO and SO<sub>2</sub>
  - B HCl and H<sub>2</sub>O
  - C HF and H<sub>2</sub>O
  - D VOCs and dioxins
  
3. Which of the following would be the preferred method for drying a gas stream for monitoring of HCL from a stack?
  - A Chiller dryer
  - B Permeation tube
  - C Unheated system
  - D All would be as good
  
4. Which of the following could be used to zero a NOX analyser?
  - A Nitrogen
  - B 21% Oxygen balance in nitrogen
  - C Air scrubbed in a carbon scrubber
  - D All of the above

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## **Answers**

Level 1      1A, 2A, 3A, 4C, 5B,6C, 7D, 8B, 9B, 10B, 11A, 12C

TE1          1B, 2C, 3A

TE4          1A, 2B, 3B, 4D